PEST CONTROL

AUGUST 1955

23 no. 8

Rodent Issue

F&WLS Agent Delves Into Rodent Control & Grain Sanitation Pg. 9

Latest List of Films and Publications on Rodent Control Pg. 16

Profitless Pests Can Be Profitable Pg. 20

How to Halt Rat Invasion Of Public Dumps Pg. 24

Two Dallas PCOs Report On German Roach Control With Malrin Pg. 34

Schedule for 1955 NPCA Denver Convention Nears Completion Pg. 38

Gibson Gives 1, 2, 3's of Food Plant Environmental Sanitation Pg. 40

Have A Black Carpenter Ant Problem? Pg. 44

COMMONWEALTH INST.
ENTOMOLOGY LIBRARY
- 1 SEP 1955
SERIAL V.S.A.153
SEPARATE

E&A

Even the smallest opening in grain storage shed is enough to permit rodent access. White circle at upper left shows small crack in granary door. Enlarged view of same opening (large white circle at bottom) taken five minutes later catches well fed mouse leaving bin. Photo courtesy of Noble Buell whose grain sanitation article begins page 9.

Since 1933

Magazine of the Urban and Industrial Pest Control and Sanitation Service Industries for Over 22 Years

they got me, pal . . .

them **FLY FLAKES*** *is moider!*

kill 'em fast . . . and easy! FLY FLAKES kill flies in minutes • kill resistant strains • kill maggots • are economical to use • for dairy barns, feed rooms, poultry houses, manure piles, outside areas. Available in 1 lb. cans; 2, 5 and 10 lb. bags, and 25 lb. drums.

MATHIESON

OLIN MATHIESON CHEMICAL CORPORATION
Insecticides Division
One Park Ave., N. Y. • Little Rock, Ark. • Baltimore 3, Md.

*FLY FLAKES is a trademark.

KILL Rats - Mice!

with

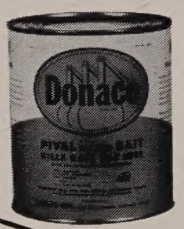
Donaco Pival RODENTICIDES

Complete Rodent Control in 10 to 14 days!

Now—science's greatest contribution to effective rodent control! Donaco contains Pival, the new and superior anti-coagulant poison that destroys whole colonies of rats and mice in 10 to 14 days—eliminates "bait shyness" and reduces the hazard to humans and domestic animals to an absolute minimum.

Donaco TRADE MARK

The Only Complete Line in the Rodenticide Field!



DRY MEAL BAIT

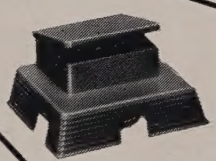
A cereal type bait far more acceptable to rodents than the choicest natural foodstuffs. Retains its high palatability indefinitely . . . resistant to mold growth and insects. Sealed in 1½ lb. and 3 lb. tin cans.

Liquid BAIT

One packet dissolved in a quart of water provides rodents with a tasty solution 10 times more acceptable to them than plain water. Contains Pivalyn, the water soluble sodium salt of Pival.

Liquid Bait DISPENSER

The only liquid dispenser on the market designed specifically for rats and mice! Holds one quart of water. Small evaporation area assures long term effectiveness without frequent refillings. Made of strong, durable Styron. 5¼" high.



Mouse BAIT STATION

Complete with 4 oz. package of dry meal bait (enough to kill 40 mice). Specially designed for safe, efficient control of mice. Far superior to any trap. 4 oz. bait package fits into station—releases bait as mice feed. Station is 2⅞" high, 6" wide, 5" deep.

HIGH PALATABILITY • MOLD RESISTANT • INSECT RESISTANT

See Your Pest Control Jobber

DONCO, INC. 1150 W. HAMPDEN, ENGLEWOOD, COLORADO

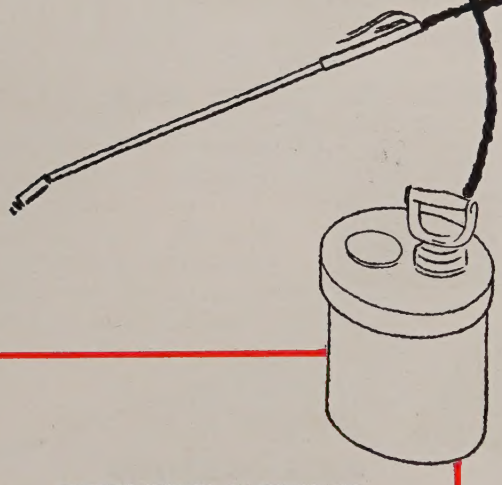
News about

B. F. Goodrich Chemical *materials*

EFFECTIVE IN KILLING

ANTS
GERMAN ROACHES
SILVERFISH
FLEAS
BEDBUGS
LICE
FLIES
MOSQUITOES
CARPET BEETLES
HOUSE SPIDERS
MOTHS

Liquid spray
Good-rite
STROBANE
REG. U.S. PAT. OFF.
for the pest control operator



GOOD-RITE Strobane—thoroughly proved as an insecticide and mothproofing agent—is the ideal starting point for the pest control operator in formulating efficient liquid sprays. Strobane is highly effective in the control of ants and other pests shown above. It offers many advantages for use in hotels, restaurants, bakeries, warehouses, and other locations where insects are a problem.

CHECK THESE ADVANTAGES:

- **Pleasant odor**
- **Requires no secondary solvents**
- **Leaves no visible crystalline residue**
- **Easy to formulate**
- **Will not deteriorate in storage**

Strobane, used with petroleum distillate diluents, is an effective liquid spray in low concentrations.

For samples and detailed technical information, please write Dept. AH-3, B. F. Goodrich Chemical Company, Rose Building, Cleveland 15, Ohio. Cable address: Goodchemco. In Canada: Kitchener, Ontario.

FORMULATIONS OF STROBANE ARE AVAILABLE THROUGH McLAUGHLIN, GORMLEY KING CO., INC. MINNEAPOLIS, MINNESOTA

Good-rite CHEMICALS

B. F. Goodrich Chemical Company

A Division of The B. F. Goodrich Company

Hope It Was Denied!

A clipping from the *Buffalo Evening News* recently carried a plea from that city's supervisor of rodent control for an additional $1700 to purchase 100 pounds of 1080 (enough for 5 years) for city dump rat poisoning before present stock of the discontinued rodenticide is depleted. Even if he got the money, how could he purchase 1080? We've been told PCOs can only stock up on 1080 in the same quantity they have been buying in the previous year. We hope his plea was denied.

It has been just such use of 1080 by unlicensed persons that was partially responsible for stopping manufacture of this compound. Pest control operators had to be well-qualified and heavily armed with liability insurance before they could buy 1080. But, municipal governments and other public agencies apparently had no trouble obtaining it without such restrictions.

Cities have no business putting out 1080 on public dumps anyway. This is a job for professional PCOs. In Buffalo last year reportedly $1903.50 was spent for ingredients and $1270.08 for labor to distribute 4700 pounds of mixed bait on five dumps. Any local pest control firm would have been glad to take the job at those figures.

Another evidence of what can happen when a city takes over its own pest control work comes from Chicago where the papers report a 5-year old boy ate and passed out to his playmates rat poison wrapped like candy kisses that he'd found next to his garage. The pieces were said to have been marked, "City of Chicago Rat Poison." Could it have been city employees found it easier to dump baits behind some garage than to place them properly?

Well-meaning legislators are clamoring to license PCOs who use effective pesticides in their work, but are content to let alone the hot political potato of what to do about unlicensed public employees who promiscuously strew these same poisons carelessly. PCOs are trained experts who earn their livelihood handling these chemicals; they know what they're doing. Most cities can only afford underpaid, common laborers to carry-out their pest control programs. Use of PCOs for this work would cost taxpayers a lot less money in the end and result in more careful use of insecticides and rodenticides. Fortunately an increasing number of local health departments now have pest control operators place pesticides.

James A. Nelson

Editor

PEST CONTROL

EVERY MONTH SINCE 1933

JAMES A. NELSON
Editor

H. B. WILSON
Assistant Editor

R. J. HOFFER
Circulation Manager

KARL HASSLER
West Coast Representative

Volume 23 **AUGUST 1955** **No. 8**

In This Issue:

Rodent Control and Grain Sanitation
By Noble E. Buell 9

Films and Publications on Rodent Control
By John C. Jones 16

Let's Put the Profit in Profitless Pests
By Dr. Neely Turner 20

Rat Control on Public Dumps
By Galen Oderkirk, Ernest Mills, Milton Caroline 24

"Control of Rats and Mice"
Book Review by H. Jack Spencer 30

Our Experience with Malrin for German Roach Control
By Clayton and Dick Wright 34

NPCA Convention News 38

Environmental Sanitation in the Control of Pests Of Public Health Importance
By William C. Gibson 40

Survey of Farm Granaries 42

Black Carpenter Ant Injury, by Dr. J. O. Rowell 44

Sweet Music for Starlings
Notebook by Harold Burnside 52

Look Alikes: 8, Drugstore Beetle and Cigarette Beetle
Primer by Dr. Marion E. Smith and Hsiu-fu Chao 54

Industry, Government Hold Joint Meet in D.C. July 8
To Study Clean Grain Education Program 58

Letters 6
News 50
Infestation Report 56
Calendar 56
Classifieds 61
Advertisers 61
Pestales 62

Cooperating with NATIONAL PEST CONTROL ASSOCIATION

Published Monthly by
TRADE MAGAZINES, INC.
Publication Office: 324 N. State Street, Painesville, Ohio

Please send all correspondence to
Editorial and Advertising Offices
1900 Euclid Avenue, Cleveland 15, Ohio

Single Copy Price: 50 cents. **Subscription Rates:** U. S. and possessions, Canada and members of the Pan-American Postal Union, 1 year, $5.00; 2 years, $8.00. All other foreign subscriptions, 1 year, $6.00; 2 years, $10.00. **Change of Address:** Three weeks advance notice is necessary for change of address. Both old and new address must be given. Post Office will not forward copies. Entered as Second Class Matter at the Post Office at Painesville, Ohio, under the act of March 3, 1879.

easy

to

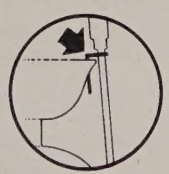
FILL - USE - CLEAN

UNIVERSAL S-70

4-gal. "Professional"

OPEN TOP SPRAYER

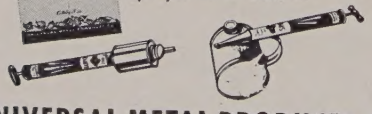
- Funnel top for easy filling
- Entire top easily removed for cleaning
- Exclusive nozzle shut-off eliminates all drip
- E-Z Clip for attaching nozzle rod to top
- Two-hand grip handle for easy pumping
- Valve for regulating hose pressure
- Positively accurate tank pressure gauge
- Interchangeable brass nozzles for adjustable cone or flat fan spray
- Stainless steel tank
- New "safety embossed" flared pump for blow-out proof air release



E-Z Clip

Here's a sprayer designed and built for men to whom spray time is money. Check all its standout features and compare the S-70 with any sprayer in the field. You'll agree it gives you the most in easy, dependable operation and consequent profits.

New FREE catalog gives full details of complete Universal line, including popular hand sprayers and dusters.



UNIVERSAL METAL PRODUCTS CO.

Division Air Control Products, Inc.

PAUL ST. SARANAC, MICHIGAN

Letters

English PCO Wants Data On Methyl Bromide Fumigation

We are subscribers to your journal and the issues are always read with great interest as there is no comparable publication in this country.

In your April issue we were particularly interested to read the article on the methyl bromide fumigation at Imperial, California ("Methyl Bromide Dooms Khapra Beetles," p. 22), and as we have recently been experimenting with types of apparatus for vaporization of methyl bromide we wonder whether you are able to give us some more detailed information as to the method employed.

In particular we would like to know:

1. Capacity of the steam boilers.
2. Length and diameter of the copper coils used.
3. Rate and pressure under which the gas was introduced into the boilers.
4. Whether any warning agent such as chloropicrin was used with the gas, and if not what is your opinion as to its use with particular reference to whether chloropicrin would come over or be separated out in the coils, and if so the probable results.
5. Bearing in mind the amount of heat absorbed to vaporize the gas what heat is required in each heat exchanger to ensure continuous vaporization.

F. L. Coventry

Deodor-X Hygiene Services, Ltd.
Birkenhead, Cheshire
England

Pest Control querried fumigation expert Karl Hassler, of the Neil A. Maclean Co., Los Angeles office, for the answers to this PCO's problems. Here is Mr. Hassler's reply.

Since the type of work described in *Pest Control* is a bit unusual, the job was done with equipment and methods that were available and not necessarily the best that may be devised should jobs of that nature become routine operations.

Heat exchangers are small steam, vertical tubular boilers. The boiler is heated by a liquid petroleum gas burner. These exchangers were built originally to evaporate liquid hydro cyanic gas and have been converted without alteration to use methyl bromide. We do not know the output of the heater in B.T.U.'s but the water capacity is about three gallons. The burners will develop 15 pounds of steam pressure in about five minutes. We work very close to the capacity of the heat exchanger which is about five pounds of methyl bromide per minute. If the burners aren't clean, or the gas pressure is low, it is necessary to restrict the flow of liquid methyl bromide to allow steam pressure to build up. These boilers are set to blow off at 15 pounds p.s.i. gauge pressure. As long as there is any pressure at all they will evaporate about five pounds per minute. If the pressure is high, the gas comes out hotter than it needs to be. But we are restricted to about that speed since the liquid won't come out of the cylinder any faster. The liquid comes to us with about 125 pounds of nitrogen pressure on about 20% of the cylinder volume as head room.

The methyl bromide tube in the boiler is about 30 feet of ½" copper tube, wall thickness about 30 thousandths. The inlet is ¼" tube, the outlet ¾" pipe to garden hose. If hose lines over 50' are used, I would suggest that a "Y" fitting at the heat exchanger and two hoses be used to minimize back pressure on the heat exchanger.

No warning agent was used on the Imperial job. I would not suggest that chloropicrin be mixed with methyl bromide for heat exchanger use. The principal reason is corrosion of expensive equipment. Warning agents, where needed, can be otherwise applied more satisfactorily.

Pest Control welcomes expressions of opinions from its readers. Send ideas and comments as briefly as possible to James A. Nelson, Editor, Pest Control, 1900 Euclid Avenue, Cleveland 15, Ohio.

Economical... Dependable...

PEST CONTROL PRODUCTS

FOR RESISTANT FLIES...

MALATHION. Most efficient low-cost way to kill flies including those which have developed resistance to DDT and other chlorinated hydrocarbons. Quick-acting! *Up to three weeks residual,* depending on original infestation, general sanitation and weather. Malathion insecticides are formulated by well-known manufacturers under their own brand names. Easy to use as dry bait or as spray made from wettable powder or emulsifiable liquid.

FOR RATS...

CYANOGAS® A-Dust. The ideal fumigant for effective, economical control of rats in burrows, city dumps, sanitary fills; under sidewalks, tight floors, pavements; along ditch banks, levees. Not a bait—CYANOGAS A-Dust liberates hydrocyanic acid gas in the burrow. Rats, adult and young, that breathe the gas die quickly. A-Dust is ready for instant use, requires no further preparation. Best applied with handy CYANOGAS FOOT PUMP. Method of application leaves no dangerous residues to be picked up by children or pets.

FOR INSECTS...

AERO* HCN DISCOIDS, Fumigant. Most generally used fumigant in the Pest Control industry. Simplifies job of fumigating dwellings, industrial buildings, railroad cars, ships, stored commodities. DISCOIDS are thin cellulosic discs saturated with commercially pure hydrocyanic acid, and are simply scattered from the can. No dirt or mess in application or clean-up. Especially suitable where insects and rodents are a problem in enclosed spaces.

Consult your regular source of supply, or write us for further information.

Branch Offices: Donaghey Building, Little Rock, Arkansas.
1440 Broadway, Oakland 12, California.
3505 N. Kimball Ave., Chicago 18, Illinois.
5025 Pattison Ave., St. Louis 10, Missouri.
Burwell Building, Knoxville, Tennessee.
16 West Martin St., Raleigh, N. C.
Brewster, Florida.

AMERICAN Cyanamid COMPANY

AGRICULTURAL CHEMICALS DIVISION

30 Rockefeller Plaza, New York 20, N. Y.

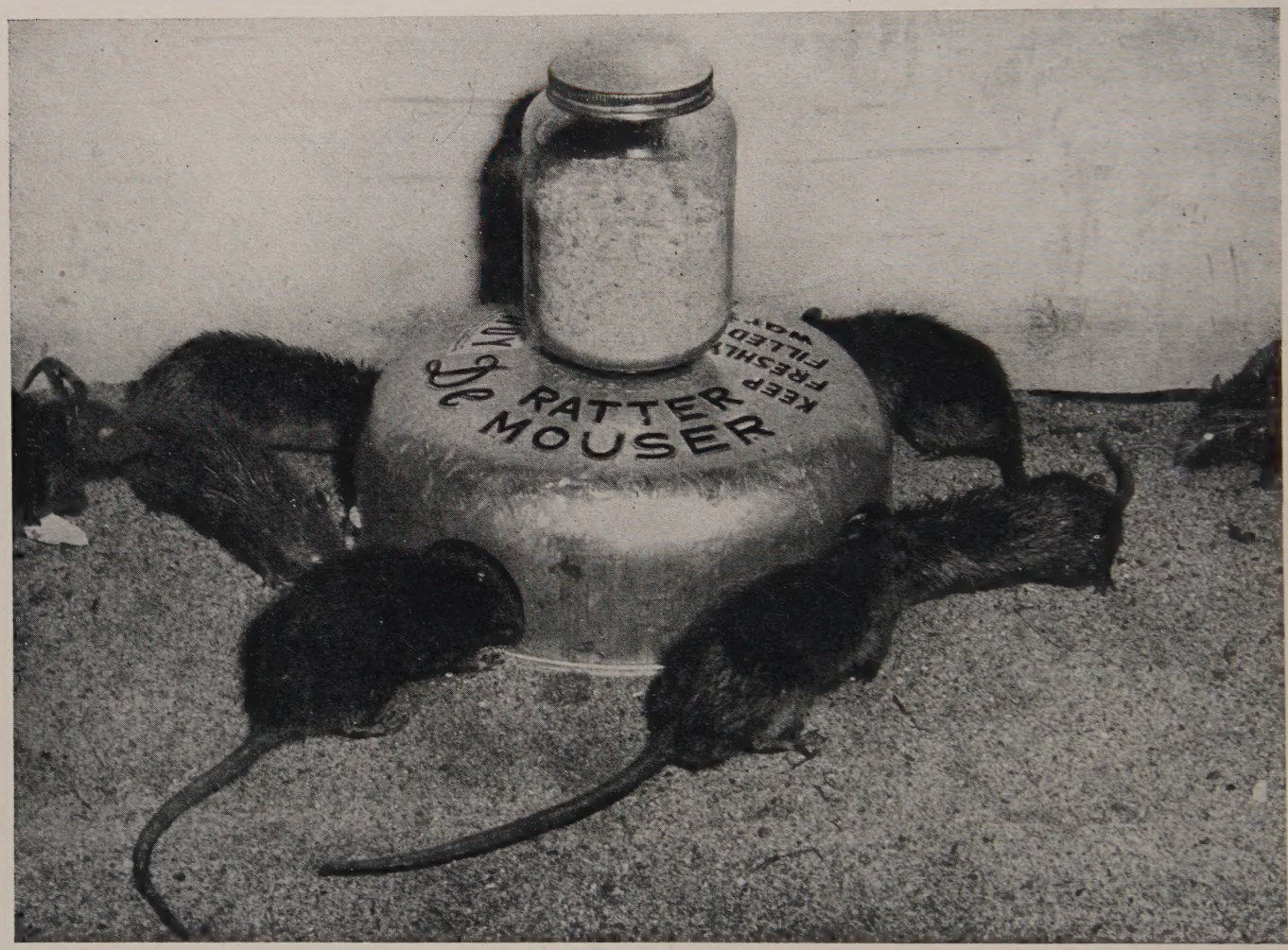
rax *warfarin*

sure death to rodents

More than three years of extensive usage in every phase of Rodent Control has convinced the Pest Control Industry that RAX (.5% Warfarin) has no equal for positive control of rats and mice.

Repeated use of RAX (Warfarin) means repeated profits for you. No other rodenticide can match the performance, economy, and safety of baits made from RAX (.5% Warfarin).

Our new RAX POWDER (.5% WARFARIN) brochure is just off the press. Write for your copy today.



Try the Prentiss rodent killing combination — RAX POWDER (.5% Warfarin) and the DE-RATTER DE-MOUSER, permanent bait station. Send today for complete information on RAX and the DE-RATTER DE-MOUSER.

Use these other PRENTISS PERFORMANCE-TESTED PRODUCTS

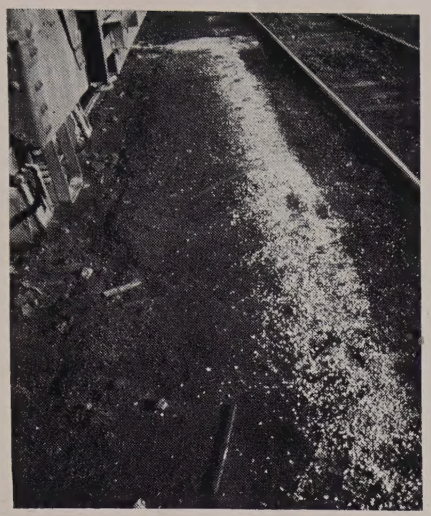
- PYRETHRUM
- ALLETHRIN
- PYRONYL CONCENTRATES
- LINDANE
- D. D. T.
- CHLORDANE

rax *warfarin*

PRENTISS DRUG & CHEMICAL CO., Inc.

110 William Street, New York 38, N. Y.

9 South Clinton Street, Chicago 5, Ill.



Spilled grain along railway sidings makes an easy source of food for rats around elevators.

Written Especially for PEST CONTROL by

NOBLE E. BUELL

District Agent, U. S. Fish & Wildlife Service
Mitchell, South Dakota

A Look Through the Window At

Rodent Control and Grain Sanitation

ANYONE who eats cereal foods has a personal interest in grain sanitation. With a reported 900 million bushels of wheat on hand in the United States as of July 1, 1955, most of it intended for human consumption, and with the prospect that a normal crop this year will utilize all remaining storage space available, many persons are directly or indirectly concerned about the sanitary measures applied to the handling of this agricultural product.

People, including those in governmental agencies, who are part of the grain-handling chain from producer to consumer, or have a stake in agricultural credit, are certainly concerned about adverse reflections in the price structure of this commodity. Transportation agencies are concerned that grain is delivered in the same condition as received. Towns and cities are directly interested with sanitation problems if elevators, terminals, bin-site storages, or processing plants are included within their perimeters.

• No Grain Safe from Attack

All cereal grains, as well as the many other farm products which end up on the dinner table, are subject to rat, mouse and bird contamination at many points between the field and the consumer. Rodent droppings, urine, and hair, bird excreta and feathers are most common contaminants.

A major portion of these foreign substances are removed during cleaning operations. At some point during the processing or food preparation, remaining contaminants are undoubtedly sterilized, so that the effect on health is negligible. Nevertheless, the American public regards animal excreta as filth when it occurs in their foodstuffs, and no amount of sterilization, dilution, or pulverizing removes their revulsion against consuming such objectionable matter in food.

Despite national emergencies, such as war or the threat of war, the American public must be pleased with products, or it will not purchase them. Product prestige, in the eyes of the potential customer, is the goal of all advertising and no product can exist long without such prestige. Present sanitation standards, as well as production standards, were undreamed of fifty years ago. It is unlikely they will be lowered in the future. It is fairly certain that the buying public will get what it wants — whether it be color, style or sanitation.

• Prevention Is Answer

The real problem hinges on the fact that it is not yet possible to remove completely all animal contaminants from grain once they are present, without undue processing costs which would certainly end up as a price penalty. The obvious answer is to prevent any contamination in the first place. But take a quick look at what may be involved in this simple conclusion:

In wheat-producing areas there are many species of native mice. Most of them are grain and seed eaters. They are attracted by an abundance of grain and thrive and multiply under such favorable conditions. In addition, we brought with us from Europe the house mouse and the common Norway rat. They are now established in nearly every community and live with us the year around. In fact, they are now so much a part of the American scene that it has been somewhat cynically said the problem is not so much how to get rid of commensal rats and mice as a problem of reducing their numbers to a point where people are willing to live with them. In any case, the common rat and mouse like the conditions which surround human existence and are likely to be found wherever there is human activity.

A variety of native and introduced birds — including English sparrows, pigeons, and starlings are also fond of man's food and are well distributed in both rural and urban areas.

• How Filth Gets Into Grain

The quantity of contamination is not constant, for handling practices vary in different sections of the country, but by fol-

Most modern grain storage bins won't keep out the rodents if piles of trash are permitted to accumulate around them. Shown here is an auto junk yard which makes a perfect rat harborage.

lowing the handling chain, it is easy to point out where and when rodent and bird filth gets in and on grain. Take, as an example, the wheat-producing areas of the Dakotas. Harvesting by combine is now almost universal. Swathing wheat, that is, mowing it and allowing it to dry before combining, is a common practice in some sections. In event of unfavorable weather, wheat may lay in the swath for some time, thus providing food and shelter for native mice, and on occasion, may attract large numbers of birds.

As the combine picks up a heavy swath, a percentage of mouse pellets and bird droppings deposited in the straw are harvested with the grain. This is the first, although relatively slight, source of contamination. Possible remedies include controlling or repelling the mice and birds, or possibly changing the harvesting practices.

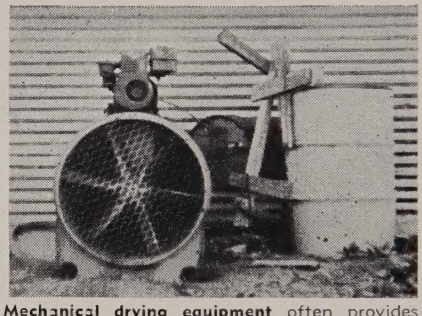
• Keep Machinery Clean

Combines do not always run twenty-four hours a day. Left idle in the field, even overnight, mice and birds are attracted by the residues of grain in the machinery. This is another source of contamination. The solution here is fairly simple — clean out the machinery before resuming operation. In other words, give wheat-harvesting machinery the same sanitation inspection a dairy-man gives his milk-handling equipment.

Has the truck which follows the combine in harvesting operations been cleaned? Or have barnyard chickens, rats and mice fouled the truck bed enough to contaminate the wheat subsequently carried by that vehicle? These trucks may be a small item for inspection, but, judging from 4-H project reports, they are an important one.

How does grain get from the truck to storage? Possibly by scoop shovel, but more likely by mechanical elevator. Is such equipment a bird roost or a rodent haven when not in use? Here again, inspection and cleaning are "musts."

At the point of farm storage, take a good look at the actual bin itself. Grain may remain here a long time, since farm storage is convenient and is also a source of revenue to the farmer. First, is the bin clean? If the grain is contamination-free to this point, and meets other standards, much farm-stored grain will come under Government loan or purchase agreements. To describe typical farm storage is nearly impossible, since it ranges from abandoned dwellings to the latest steel bins. Farm storage facilities are definitely improving at a rapid rate. In any case, the owner will have to deliver wheat free from contamination to get other than a stock-feed price.



Mechanical drying equipment often provides food and shelter for rats, mice, birds, insects.

• 3 Steps to Protect Bins

Several things can be done on farmsteads to keep this valuable property clean. First, remove the rodents and their harbors. Second, make the storage bin rodent-proof. Third, screen birds out and cover any openings so that droppings from roosting birds cannot fall into the bin. At this point it is necessary to remember that rodents and birds are not the whole problem of grain storage. Quality of the grain, moisture content, and possible weevil and other insect infestations must be taken into account. Not all good rodent-proofing possibilities are good grain-handling practices.

From farm storage, grain may go to a country elevator, or it may go to a Government bin-site for further storage. In either case, it must be transported, and transporting vehicles should be checked to be sure they are clean and do not contribute rodent or bird filth.

A great deal of contamination in grain occurs in storage on farms and at Government bin-sites. Do not regard storage as a static interval since rodents and birds certainly do not, and the grain itself is a perishable product. Frequent inspections are a must to prevent deterioration of any rodent-proofing.

Unlike most farm storage facilities, Government bin-sites are often found sufficiently close to small towns to attract rats inhabitating town dumps or other breeding areas. Some grain spillage is unavoidable. Excessive spillage or leaking bins will compete with any dump for attracting rodents and birds and, therefore, contamination, provided there is harborage available for these species. This harborage can be under bins, in fence corners, or any sheltering weedy patches.

Commodity Credit Corporation bins are of four principal types, varying with locality and age: (1) circular steel bin; (2) quonset-type steel bin which can be extended to almost any capacity; (3) circular wooden bin; (4) and square frame buildings. Some are on good solid foundations; a few are on the bare ground. Poorly-assembled buildings provide easy access to their contents.

• Contamination in Elevators

The familiar country elevator identifies the grain-producing

Poor construction and lack of maintenance adds up to heavy rat infestation, severe loss.

A Growing New Market for PCO's

CHLORDANE

. . . for turf insect control around landscaped plants and offices

WITH industry flocking to the suburbs, insects are now chewing up millions of dollars more in lawns, shrubs and flowers around these newly landscaped grounds. Why not go after this extra "outdoor business"?

Without requiring high-priced application equipment, CHLORDANE kills destructive insects with complete safety to turf and gardens. *Write today for proven suggestions on establishing a profitable outdoor-insect control program.*

CHLORDANE KILLS ALL THESE INSECTS:

Lawn Moths	Ants	Carpet Beetles	Maggots	Strawberry Root Weevil
White Grubs	Chiggers	Mosquitoes	Flea Beetles	Sod Webworms or Lawn Moths
Chinch Bugs	Earwigs	Clothes Moths	Mole Crickets	
Japanese Beetle Larvae & Adults	Wireworms	Wasps	Thrips	
Cutworms	Armyworms	House Flies	Strawberry Crown Borer	
Grasshoppers	Spiders	Termites	Seed Corn Maggot	
Crickets	Cockroaches	Silverfish	Spittle Bugs	
	Fleas	Box Elder Bugs		

VELSICOL CORPORATION

PETROLEUM DERIVED CHEMICALS — VELSICOL — SERVING BASIC INDUSTRIES

REPRESENTATIVES IN PRINCIPAL CITIES

General Offices and Laboratories 330 East Grand Avenue Chicago 11, Illinois

VC-582-1405

community. How much contamination occurs here?

In some elevators, it is difficult to see how contamination could occur; in others, it is difficult to see how it could not. However, the elevator has problems of sanitation which have not appeared in grain-handling stages prior to this point. It is a place of business, it is active, its doors are usually open; to birds and rodents as well as customers.

Elevators are usually located in the industrial section of the town, rubbing elbows with many types of businesses which may harbor rats and mice, but make no efforts to control them since they do not present an immediate problem to these businesses. Elevators are constructed on well-used transportation routes — rodents can be brought in as well as taken out. The elevator's very existence attracts rats.

Whereas a farmer's rats may be largely his own, the elevator's rats may belong to the town. Rat and mouse removal here begins with the elevator itself, but it can be completed only if the entire town assists in their removal. Successful remedial action rarely results from anything less than activation of municipal responsibility.

Lack of foundation beneath wooden granary makes a good hiding place for rodents. They can find easy access to grain through broken board illustrated in enlarged circle at right.

Benson Co. Grain Elevators
WARN AGAINST
Grain Contamination

To comply with Federal Food and Drug Administration Sanitation Standards, Benson County Grain Elevators

WILL NOT ACCEPT GRAIN IF CONTAMINATION IS FOUND, EXCEPT AT FEED PRICES

EFFECTIVE IMMEDIATELY, Benson County Grain Elevators will sample grain and inspect for contamination before the grain is accepted. Contamination is measured by the presence of Rodent and Bird Pellets and Kernels damaged by Insects.

Farmers are urged by the Undersigned Grain Elevators to use the following ASC grain standards check list to prevent grain contamination

1. Are premises surrounding granary free from rodent harboring places such as piles of junk, wood, straw, trash, fence rows, weeds, etc.?
2. Is building free from rodent harboring places such as double walls, false floors and trash?
3. Is foundation and floor rodent proof?
4. Is the vent cap on top of the steel granary in place?
5. Do the doors of steel granaries fit properly?
6. Are wood doors and trap doors tight and properly closed?
7. If rodents are prevalent, are you poisoning and trapping?
8. Is building free from openings through which birds and poultry or their droppings can get on the grain?
9. Are frequent checks made on the condition of the building and stored grain?
10. Is there any evidence of any nature that your grain has been contaminated by rodents, birds and or insects?

BE SURE to check your bins of Loan Grain. Skim off those top few inches that are contaminated with Bird and Rodent Pellets before starting to load the grain. **A FEW MINUTES MAY SAVE YOU MANY DOLLARS.**

Thomas Ose Elevator
William Ose, Mgr.
Brinsmade

C. J. Thoreson Elev.
W. J. Thoreson, Mgr.
York

Farmers Union GTA Line Elevator Div.
Leeds
K. D. Voelz, Mgr.

Farmers Union Coop. Elev. Co. — Baker
A. H. DeGroot, Mgr.

Farmers Union Coop. Elev. — Oberon
B. C. Thompson, Mgr.

Farmers Union GTA Line Elevator Div.
C. W. Martin, Mgr.
York

Equity Elev. & Trading Co. — Warwick
Ray Richardson, Mgr.

Victoria Elevator Co.
Tokio
R. A. Abrahamson

Esmond Equity & Trading Co. - Esmond
J. B. Marthe, Mgr.

Farmers Union GTA Lime Elevator Div.
Maddock
A. O. Rygg, Mgr.

Maddock Farmers Grain Co. - Maddock
R. Bergsgaard, Mgr.

Farmers Union Elev. Co. - Minnewaukan
G. Solberg, Mgr.

Farmers Union Coop. Elev. Co. - Harlow
M. M. Lysne, Mgr.

Farmers Coop. Elev.
Leeds
C. Torgerson. Mgr.

Leeds Elevator
Leeds
Robert Bimler, Mgr.

Farmers Coop. Elev. Co. — Hesper
Vernon Larson

Peavey Elevators
Oberon
K. Knudson, Mgr.

This newspaper advertisement was run by local grain elevator operators in the Benson County Farmer Press, Minnewaukan, N. D. Elevator operators in other mid-west grain producing regions are placing similar advertisements in their local papers to boost sanitation programs.

• Elevator Operators Are Becoming Sanitation Minded

Elevator operators, being among the first to feel the impact of enforcement of grain sanitation standards, are becoming increasingly critical of their own housekeeping and of the wheat they buy. The financial aspect of grain sanitation is pointed up in recent North Dakota newspapers. Elevator operators in a number of North Dakota communities have, by paid advertisements, publicly announced they are complying with U. S. Food and Drug regulations in keeping their houses free of insects, rodents, and birds, and by not accepting contaminated grain. This is more than a premium for clean wheat — it is actually an embargo against contaminated grain. It is unlikely that an elevator operator who establishes a reputation for clean wheat on the market will be willing to put contaminated grain of any kind through his house, even as stock-feed.

Leaving the elevators, transportation facilities again enter the picture. Are they clean? Will the cargo at destination be exactly the same as at the origin? What is the problem on long hauls? These facts will eventually have to be ascertained. What liability, if any, does a common carrier have for deterioration of the sanitary condition of grain in transit? It is necessary that carloading become another inspection point in grain handling.

Finally, the grain comes to the terminal and from there to the processor. How much contamination occurs here is also unknown. These establishments already have the best known resources to take necessary corrective action, and are generally in

areas serviced by the pest control industry.

Up to this point, the contamination discussed can be detected with the naked eye. Currently the yardstick used by Food and Drug Administration inspectors for determining seizures is a level of more than two rodent pellets per liquid pint of sample wheat. It naturally follows that determination of acceptability at any inspection point will follow the identical standard or procedure. The amount of urine deposited on the grain surface by rodents has not been measured, and it can, of course, cause considerable contamination.

- **Air-Borne Contamination**

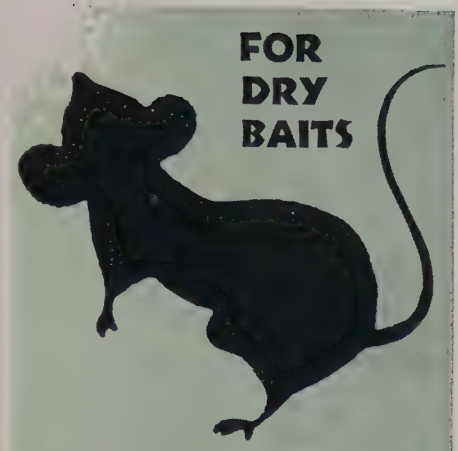
To complete the picture on contamination possibilities, it must be mentioned that there is evidence that air-borne contamination occurs — particularly from rodent hair and hair fragments — presumably either directly from the animals or from pulverized rodent droppings which invariably contain hair because of the animals' habit of licking themselves.

Prevention of air-borne contamination, a problem of processing plants, would likely entail four conditions: First, complete absence of rodents and birds within the plant; secondly, complete filtration of all sources of air supply within the plant; third, complete removal or complete absence of contamination in grain taken into the plant; and fourth, control of all rodents and birds within air-drift distance from the processing plant.

It appears, in spite of all else the processor may do, he must first have uncontaminated grain to prepare a pure product. This puts us back where we started — to prevent contamination before it occurs. Contamination can be added at many places, it can be reduced at some, but once it is present, it can be completely eliminated only in rare cases, and then with extreme difficulty and at great expense.

- **Who's at Fault?**

In spite of all the discussion on every level, there is remarkably little real factual information on where and when contamination gets into grain. Is the producer the villain, or is it the country elevator, the buyer, the transporter, or the processor? Or do they all contribute a little? Do some producing areas natural-



anti-coagulant rat and mouse killer

PIVAL®

More than just another rodenticide, Pival combines its effective killing power with three other and exclusive characteristics.

Tops in acceptability—on free feeding tests against a leading anti-coagulant rodenticide, Pival cereal baits have shown substantially greater acceptability — an important plus in achieving effective control.

Resistance to insect infestation — extensive laboratory tests of Pival's insecticidal action have demonstrated that, even under conditions of severe exposure, specially prepared Pival cereal baits are far less subject to insect infestation — an important plus in bait storage and in use.

Resistance to mold contamination— during large scale field application in both Louisiana and the Philippines, permanent bait stations exposed during the heat and humidity of full Summer remained completely free of mold. Laboratory tests prove the delaying action of Pival to mold contamination in cereal baits — another important plus to permanent baiting programs.

It is easy to see why large scale field usage has shown an unusually high degree of successful application of Pival cereal baits in the control of Norway rats, roof rats and house mice. Reorder now for the coming season.

CHEMICAL SPECIALTIES MOTOMCO INC.

MOTOMCO, INC.
10 MURRAY ST., NEW YORK 7, N. Y.

anti-coagulant rat and mouse killer

PIVALYN®

Pivalyn is the only water soluble anti-coagulant which combines top acceptability, resistance to molding and equal effectiveness in hard and soft water. Used alone in place of the older cereal-type baits, this superior water-soluble anti-coagulant has proven its effectiveness in areas from coast to coast and under widely varying conditions on farms, in homes and in business establishments.

Simple to use, it is packaged for the PCO as a 4.4% concentrate in convenient individual foil packets. One Pivalyn packet to one quart of water— that's all there is to it! As a "taste-treat" for rodents, and under conditions of difficult control, sugar may be added to the Pivalyn solutions.

Pivalyn's exclusive mold-resistant action provides excellent keeping qualities. Even with the sugar added (and laboratory tests have indicated as high as 10 to 1 acceptability over plain water by the addition of two tbsp. of sugar per quart), Pivalyn water baits normally remain mold-free for periods up to eleven weeks.

A worthy companion to Pival — the new and improved rodenticide for use in dry baits — which has proven itself by your reorders, Pivalyn is ready to go to work for you. Packaged for the PCO in units of 100 packets per box.

CHEMICAL SPECIALTIES MOTOMCO INC.

MOTOMCO, INC.
10 MURRAY ST., NEW YORK 7, N. Y.

ly have a bigger problem than others, or are certain individuals at fault?

Such facts will emerge in the normal course of accelerated inspections at every change of ownership. This is the hard way and some will be heavily penalized financially, perhaps unwittingly. It would appear that the combined resources of the grain industry and the government could surely dig out the facts beforehand at far less cost to the grain economy than normal attrition. There is still time for prevention rather than cure.

It is not the purpose of this article to try to tell **Pest Control** readers how to kill rats and exclude birds. Rather, we have tried to point out these five important factors concerning the grain sanitation problem: First, rodent and bird contamination does occur; second, the problem has a nationwide scope because of distribution and transportation; third, it is a problem of the whole grain industry and related businesses not any single segment or operation; fourth, at every step in handling there are operators who need the services, help and advice of pest control specialists, pesticide manufacturers, research groups, and agencies of government engaged in rodent, bird, and insect problems; and fifth, the best and most economical solution to the problem is to prevent contamination from occurring, which will require the cooperation of all concerned.

Many aspects of grain sanitation fall into a public service category; certainly they require concerted community action. Below the terminal or processor level, grain is in close contact with many other human activities where rodent and bird suppression can be approached successfully only by cooperative action.

A successful pest control program must consider grain sanitation in terms of area, rather than the conduct of pest control operations only on individual properties. Such an area, whether it be a county, trade area, or community, inevitably includes towns, bin-sites, commercial establishments and farms.

Government, whether federal, state, county, municipal or township, must realize its responsibility, at least to the point of furnishing the framework for grain sanitation organization. Without such a framework, Extension, 4-H, FFA, Crop Improvement Associations, pest control operators, grain growers and handlers organizations, and similar groups function less effectively.

In spite of 2,000 years of history to the contrary, satisfactory rodent suppression is within reach. Sanitary grain is no dream. It can be a reality. The big hurdle is that people must first want to produce, market, process and distribute as well as eat, an uncontaminated product. When that desire is a reality, whether for financial or aesthetic reasons, then the doing presents no insurmountable obstacles.

Test Herbicide Available

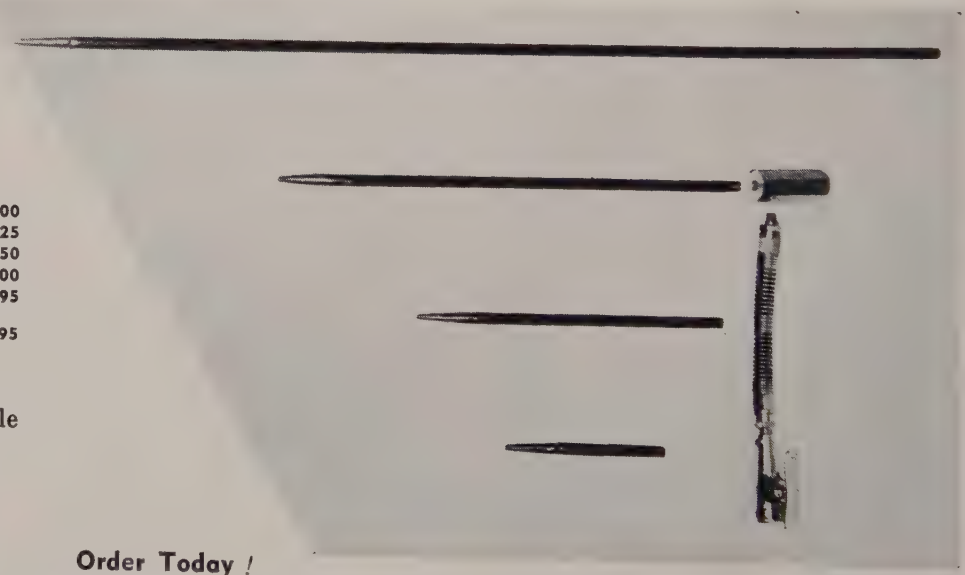
Limited quantities of the new herbicide, Amino Triazole, are now available from the American Cyanamid Co., New York City.

Although this weed-killer has not yet had acceptance for commercial sale, American Cyanamid has been granted permission to sell small amounts direct to users for test purposes.

NEW! STEEL ROD NOZZLES

Forged Steel Tipped for Pressure Treating Wood, Soil

A new, long lasting, practical tool especially developed for the termite operator



Prices

6"	$2.00
12"	2.25
18"	2.50
36"	3.00
*Hammer Head	2.95
Hose & Shut-Off Valve Attachment	4.95

All prices F.O.B. Mt. Vernon, New York

* Hammer Head with 1/8" female pipe thread

Prices subject to change without notice

Order Today !

PCE

PEST CONTROL EQUIPMENT CO.

24 North Bond Street, Mt. Vernon, New York Tel. MO. 8-1197

PESTMASTER*

Methyl Bromide Fumigant

- economical
- effective
- easy to use

PESTMASTER* MEANS DEATH for insects at every stage of life: eggs, larvae and adult. Deeply penetrating, odorless, non-corrosive and non-flammable, it can be used in all types of sealable buildings, storage bins, boxcars, warehouses, elevators and ships — penetrating into bags and packages therein.

Available in one-pound cans as well as in 10, 40, 50, 100, 150 and 400 pound cylinders, PESTMASTER* Methyl Bromide is easily applied directly from the original container. Aeration after fumigation removes all traces of the gas, and no residue of any type remains. It is effective in house fumigation, ridding the premises of drywood termites, vermin, rodents and common insects.

Fumigation manual with complete details on the many uses of PESTMASTER Methyl Bromide Fumigant is yours on request. Use the coupon below.*

MICHIGAN CHEMICAL CORP.
506 Bankson St., Saint Louis, Mich.

Please send FREE PESTMASTER FUMIGATION MANUAL.*

Name_____

Firm_____

City_____ State_____ Country_____

MB 55-3

MC **©

*Reg. U.S. Pat. Off.
**Trademark

MICHIGAN CHEMICAL CORPORATION Saint Louis, Michigan

EASTERN SALES OFFICE: 230 Park Avenue, New York 17, New York

QUALITY PRODUCER OF PESTMASTER* DDT AND METHYL BROMIDE AND OTHER AGRICULTURAL CHEMICALS

You Can Educate Servicemen and Sell Service with These

Films and Publications

On Rodent Control

by
JOHN C. JONES
U. S. Fish & Wildlife Service
Washington, D. C.

IN LAST YEAR'S July rodent control issue, Fish and Wildlife Service authority, John C. Jones, prepared an article on rodent films and publications available to PCOs. Response to this review was so great we asked Mr. Jones to revise and edit his listings for our 1955 rodent number.

Here is the latest tally of current motion pictures, filmstrips, and literature available from private industry, government agencies and universities, and where to write for them. Take advantage of these sales and technique boosters for both serviceman training programs and as a public relations tool.

This list is not intended as a bibliography. Many valuable references aren't included because they are out of print, or difficult to obtain except through libraries or on loan.

Most federal, state and local bureaus will furnish single copies of their publications free as long as the supply lasts. Larger orders will depend upon the supply on hand as well as the policy of the agency.

Federal publications may be purchased in quantity from the Government Printing Office, Washington 25, D. C., at the price per copy listed on the last page of each bulletin. When ordering, make sure title, number and date of publication are included.

LITERATURE

The following pamphlets are available from the Division of Information, Fish and Wildlife Service, U. S. Department of the Interior, Washington 25, D. C., or any of the F&WLS regional offices:

Characteristics of Common Rodenticides. Wildlife Leaflet 337, 4 pp., (Processed) January 1952.

Conquer Filth to Assure Cleaner Food 8 pp., 1955.

Control of House Mice. Wildlife Leaflet 349, 4 pp., (Processed) December 1953.

Control of Destructive Mice. Conservation Bulletin 36, 36 pp., 1944.

Rat Control Methods. (Except Warfarin) Circular 13, 16 pp., 1948.

Rat-Proofing Buildings and Premises. Conservation Bulletin 19, 26 pp., 1942.

Rats—Let's Get Rid of Them. Circular 22, 16 pp., 1953.

Use of ANTU As A Rat Poison. 2 pp., (Processed) 1946.

Use of Red Squill As A Rat Poison. 2 pp., (Processed) 1946.

Use of Warfarin for the Control of Rats and Mice. 4 pp., (Processed) 1950, (Supplements Circular 13 above).

Use of Zinc Phosphide As A Rat Poison. 2 pp., (Processed) 1947.

Some state agencies have issued detailed bulletins and pamphlets on rodent control. Most state agricultural extension services have printed leaflets or circulars, usually promotional in nature, which can be obtained by writing the state university. Many state health departments also have literature for distribution. Here are some recent state publications:

Controlling Field Rodents in California. Circular 434, 48 pp., California Agricultural Extension Service, University of California, Berkeley, 1953.

Controlling Rats and Mice. Circular 410, 36 pp., California Agricultural Extension Service, University of California, Berkeley, 1952.

Facts About Rodent Control. 32 pp., Illinois State Health Department, Division of Sanitary Engineering, Springfield, 1953.

Rat Control. 32 pp., Ohio Department of Health, Columbus, 1955.

FILMS

When applying for films on a loan basis, give the name of your organization, type of audience, estimated attendance and date of showing. Make the request as far in advance as possible. All motion pictures are 16 mm. and filmstrips are 35 mm. They are black and white unless otherwise noted.

Area Poisoning. 1 reel, 309 feet, sound. Medical Director in charge Communicable Disease Center, P.O. Box 185, Chamblee, Ga. Loaned free. Production No. M37.1f(2).

Biology of Reproduction in Rats. 1 reel, Kodachrome, The Wistar Institute, 36th and Woodland Ave., Philadelphia, Pa. Rental at $8.00 per day.

Climbing Ability of the Norway Rat. 1 reel, 3 minute short, silent. Medical Director in Charge, Communicable Disease Center, P.O. Box 185, Chamblee, Ga. Loaned free.

A Community Problem. 1 reel, 15 minutes, sound, color. Caterpillar Tractor Co., Peoria, Ill. Loaned free. Shows proper methods of refuse disposal and the sanitary landfill method in detail.

Get Rid of Rats. 1 reel, 15 minutes, sound. National Film Board of Canada, 620 Fifth Ave., New York 20, N. Y., or 400 West Madison St., Chicago 6, Ill. Loaned free to government agencies. Rental fee to others $1.50. Can be purchased for $25.00. Emphasizes community rat control.

Habits and Characteristics of the Norway Rat. 1 reel, 636 feet, sound. Medical Director in Charge, Communicable Disease Center, P. O. Box 185, Chamblee, Ga., or any U. S. Public Health Service regional office. Loaned free. May be purchased from United World Films, Inc., 1445 Park Ave., New York 29, N.Y., for $34.43. Production No. M37.1b.

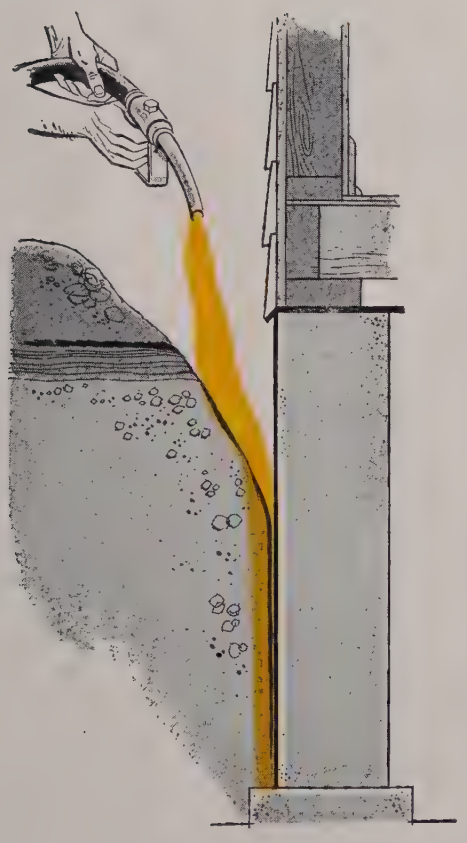
Habits and Characteristics of the Roof Rat. 1 reel. 296 feet, sound. Medical Director in Charge, P. O. Box 185, Chamblee, Ga., or any U. S. Public Health Service regional office. May be purchased from United World Films, Inc., New York, N. Y., for $19.96. Production No. M37.1c.

Insects vs. Man. 16 mm., silent, color. H. J. Davies, 3934 Geary Blvd., San Francisco 18, California. Sells

dieldrin

...the powerful, modern insecticide...

NOW ACCEPTED FOR TERMITE CONTROL



tests show dieldrin offers long-lasting protection, effective control

Now pest-control operators can offer customers dieldrin . . . the modern insecticide for effective, long-lasting termite control. Dieldrin has been tested and accepted for termite treatment.

long-lasting effectiveness

Dieldrin is famous for its long residual action and chemical stability . . . even in soil with high alkaline or acid content. Current information shows it will remain effective in *any type of soil for years!* Dieldrin is a more effective means of termite control than structural barriers, because dieldrin kills termites if they eat, touch, or breathe it.

greater assurance for your customers

Now you can offer your customers better protection against termites over a longer period of time. In many areas, your customers already know about dieldrin's effectiveness on soil insects that attack lawns and ornamentals.

simple procedure

Homes can be protected from termites easily and quickly with an application of dieldrin along foundations, according to label instructions.

SHELL CHEMICAL CORPORATION

AGRICULTURAL CHEMICALS DIVISION

460 Park Avenue, New York 22, N. Y.

keep your eye on

something NEW in PCO "undercover" work will be coming soon!

B&G
Manufacturers and Distributors of Pest Control Products
"Servicing The Pest Control Industry"
B & G Company
Plumsteadville, Pennsylvania
Dealer Inquiries Invited

for $225.00. Contains a few interesting scenes of rats.

The Insect and Rodent — Enemies of Man. 16 mm., 2 reels, 800 feet, sound. Wil-Kil Pest Control, 522 West North Ave., Milwaukee 12, Wisc. Sells for $250.00. Not for loan or rental.

Keep 'Em Out. 1 reel, 10 minutes, sound. Office of Information, U. S. Public Health Service, Washington 25, D. C., or any regional office. Loaned free. Sells for about $8.00 with restrictions.

Kill 'Em With Gas. 1 reel, 15 minutes, sound color, 1953. American Cyanamid Co., 30 Rockefeller Plaza, New York 20, N. Y., or any Fish and Wildlife Service regional office. Loaned free.

Our Enemy the Rat. 1 reel, 20 minutes, color, sound. Medical Director in Charge, Communicable Disease Center, P. O. Box 185, Chamblee, Ga. Loaned free.

Our Fifth Columnist, the Rat. 15 minutes, color, sound. Telefilm, Inc., Hollywood, Calif. Sells for $75.00. Deals with control of the black rat.

Plague Control. 1 reel, 20 minutes, sound, color. Audio-Visual Training Section, Bureau of Medicine and Surgery, U. S. Navy Department, Washington 25, D. C., Film No. Misc. 1248. Loaned free.

Practical Rat Control, Part I—Sanitation Techniques in Rat Control. 1 reel, 740 feet, sound. Medical Director in Charge, Communicable Disease Center, P. O. Box 185, Chamblee, Ga., or any U. S. Public Health Service regional office. Loaned free. May be purchased from United World Films, Inc., New York, N. Y., for $27.12. Production No. M37d.

Practical Rat Control, Part II — Rat-Proofing. 1 reel, 640 feet, sound. Medical Director in Charge, Communicable Disease Center, P. O. Box 185, Chamblee, Ga., or any U. S. Public Health Service regional office. Loaned free. May be purchased from United World Films, Inc., New York, N. Y., for $24.26. Production No. M37e.

Practical Rat Control, Part III—Rat Killing. 1 reel, 1,325 feet, sound. Medical Director in Charge, Communicable Disease Center, P. O. Box 185, Chamblee, Ga., or any U. S. Public Health Service regional office. Loaned free. May be purchased from United World Films, Inc., New York, N. Y., for $44.69. Production No. M37f.

Rat Destruction. 1 reel, 10 minutes, sound, 1945. British Information Services, 30 Rockefeller Plaza, New York 20, N. Y. Loaned free to government agencies. Service charge of $1.00 to others. Can be purchased for $12.50.

Rat Ectoparasite Control. 1 reel, 292 feet, sound. Medical Director in Charge, Communicable Disease Center, P. O. Box 185, Chamblee, Ga., or any U. S. Public Health Service regional office. Loaned free. May be purchased from United World Films, Inc., New York, N. Y., for $16.76. Production No. M37.1g.

Rat Killing. 1 reel, 476 feet, sound. Medical Director in Charge, Communicable Disease Center, P. O. Box 185, Chamblee, Ga. Loaned free. Production No. M37.1f.

The Rat Problem. 1 reel, 573 feet, sound. Medical Director in Charge, Communicable Disease Center, P. O. Box 185, Chamblee, Ga., or any U. S. Public Health Service regional office. Loaned free. May be purchased from United World Films, Inc., New York, N. Y., for $31.57. Production No. M37.1a.

Rat Proofing. 1 reel, 355 feet, sound. Medical Director in Charge, Communicable Disease Center, P. O. Box 185, Chamblee, Ga. Loaned free. Production No. M37.1e.

Refuse Collection Disposal. 1 reel, silent, color. Washington Suburban Sanitary Commission, Hyattsville, Md. Loaned free. Shows proper methods of garbage and refuse collection and incineration.

Rural Rat Control. 1 reel, 572 feet, sound. Medical Director in Charge, Communicable Disease Center, P. O. Box 185, Chamblee, Ga., or any U. S. Public Health Service regional office. Loaned free. May be purchased from United World Films, Inc., New York, N. Y., for $22.13. Production No. 4-116.0.

Sanitary Landfills CDC. 1 reel, 10 minutes, sound, color, 1947. Medical Director in Charge, Communicable Disease Center, P. O. Box 185, Chamblee, Ga., on any U. S. Public Health Service regional office. Loaned free. Illustrates use of sanitary landfill method of garbage and refuse disposal.

Sanitation Techniques in Rat Control. 1 reel, 432 feet, sound. Medical Director in Charge, Communicable Disease Center, P.O. Box 185, Chamblee, Ga. Loaned free. Production No. M37.1d.

Town Rats. 1 reel, 16 minutes, sound. British Information Services, 30 Rockefeller Plaza, New York 20, N. Y. Loaned to government agencies free; a $2.50 service charge to others.

Vandals of the Night. 2 reels, 20 minutes, color, sound, 1943. Division of Information, U. S. Fish and Wildlife Service, Washington 25, D. C., or at regional offices or district agents of the F&WLS. Loaned free. Set can be purchased for $75.00. Reel 1 covers life history, damage, etc., reel 2 depicts rural control.

FILMSTRIPS

Filmstrips must be shown with equipment using 35 mm. film. In some cases filmstrips are accompanied by a record which requires a record player operating at 33 1/3 rpm. Some of the best current available filmstrips on rodent control are:

Evaluating DDT Dusting in Murine Typhus Fever Control. 74 frames, 20 minutes. Medical Director in Charge, Communicable Disease Center, P. O. Box 185, Chamblee, Ga., or any U. S. Public Health Service regional office. Loaned free. Shows use of DDT to control rat ectoparasites and methods of the program.

(Continued on page 59)

Announcing...

MALRIN

TRADE MARK REG. U. S. PAT. OFF. PAT. APP. No. 449342

INSECTICIDE CONCENTRATE

for the control of the

GERMAN COCKROACH

More than a year of extensive experimental work in laboratory, field and commercial applications has resulted in the development of an insecticide concentrate (MALRIN) and best procedures for the control of the German cockroach *(Blatella germanica)*. New and completely different, MALRIN is quick killing, safe and economical to use.

- **CONTROL:** Both *initial reduction* and *residual control.* Controls *resistant* and *non-resistant* German roaches and houseflies, as well as many other types of insects.
- **MAMMALIAN TOXICITY:** One of the safest materials for PCO use.
- **ODOR:** Very slight insecticide odor.
- **FORMULATIONS:** 55% MALRIN Emulsifiiable Concentrate.
  55% MALRIN Oil-Base Concentrate.
- **COST:** Approximately 40 cents for the average commercial job (restaurant, store, etc.).

Another guaranteed product of

AGRICULTURAL SPECIALTIES

10219 DENTON DRIVE DALLAS, TEXAS

Write for complete information . . .

Let's Put the Profit In PROFITLESS PESTS

By
DR. NEELY TURNER

THE PEST CONTROL industry has experienced a wonderful growth during the past 15 years. Much of this growth has been in reputation, in community respect for excellent control of pests. Some of the growth has been in number of pests for which control measures are used. However, the number of pests being handled profitably is still relatively small. Many a firm has made a decent profit by controlling only rats and mice and cockroaches and bedbugs. Some others have added ants, termites, silverfish, clothes moths, and pigeons and starlings to the profit column. These represent only a few of the many hundreds of pests that may occur in homes, offices or factories.

The rest of the pests are "profitless" as far as pest control operators are concerned. They are profitless not only because they are not included in the list of pests generally controlled by operators, but also because it is difficult if not impossible to make any money controlling them.

Sometimes efforts to handle these invaders even result in a loss. There was Mrs. Jones who called about an insect in her living-room. A serviceman drove five miles, collected a wood-boring beetle, drove four miles to get it identified, returned to Mrs. Jones, who thanked him, but was not interested unless it was a cockroach. Result, 18 miles of unpaid for transportation and two hours of lost labor.

Frequency of this sort of call is very likely to increase rather than decrease. The increase should be accepted as an evidence of progress and not rejected as a nuisance. Any operator should feel complimented when he is selected as the source of information on pest control. Obviously he must find some way of handling these calls without a loss, and even turn some of them into a profit.

• How to Reduce Loss

Most calls come in by telephone, and it is here that some of the profitless business can be eliminated. A skillful person can extend the conversation long enough to decide whether or not the caller is a potential customer. If there is real doubt as to a "sale," why provide "free" service?

In every state the experiment station has some sort of provision for identifying insects, and some agency furnishing information on control. These agencies can and do satisfy most inquirers. A suggestion that the caller seek information from these departments should meet with favor, especially if the phone number, or name and address of the bureau can be given. Fortunately this does not mean the loss of a potential customer. Most agencies do not hesitate to suggest a PCO where such service is definitely needed.

When the "free-loading" callers have been eliminated, there should be some chance of gain in handling these profitless pests. If the calls come from customers, the responsibility for giving service cannot be evaded. The probability of profit is also good, because you are dealing with someone already committed to paying for pest control. These pests are obviously not included in contracts or agreements, and control measures should mean an additional charge. If the calls come from good prospects, the transaction is easy to complete. Most PCOs know how to close a sale or they wouldn't be in business.

Majority of profitless pests can be controlled by recognized and reasonably effective methods. They may not require regular monthly service calls during the year, but should contribute a substantial volume of business. The methods mentioned are designed particularly for use in the home or apartment, and not for business establishments.

• Stored Products Insects

The Mediterranean flour moth, saw-toothed grain beetle, confused flour beetle and granary weevil are brought into the pantry in infested cereals. The drugstore beetle is also a cereal feeder but will eat a variety of foods including red pepper. The Indian meal moth may come in nutmeats, nut candy bars, dried fruit or dry dog food.

Usual remedy is to destroy the heavily infested product, and fumigate or heat-sterilize food exposed to infestation (120°F for four hours for cereals). The pantry shelves may be treated with a residual DDT spray and food replaced after the spray has dried. Indian meal moth larva migrates from food when fully grown, and may reinfest susceptible eatables. It is always best to keep the supply of susceptible foods at a minimum in the summer months, and for a month after an infestation has been cleaned up.

The dermestid beetles, hide, larder and incinerator, are unusual pests. In modern dwellings they have accumulated chiefly in partially burned garbage in built-in

Dr. Turner, who is state entomologist for the Agricultural Experiment Station at New Haven, Connecticut, gave this address at this year's 15th Annual Eastern Pest Control Conference.

My carefully
planned crime wave
Hasn't materialized.
My future looks black
'Cause I've been
warfarin-ized
RESERVED
HERE LIES
Developers of warfarin—
world-famous rat and mouse killer.
Over 70,000,000 pounds of bait
used successfully, safely.
WISCONSIN
ALUMNI
RESEARCH
FOUNDATION

incinerators. A thorough cleaning of the incinerator and a good fire which burns all garbage removes the breeding places. It is sometimes necessary to spray the flue with a DDT space spray if the beetles are widely scattered. Many apartments have installed auxiliary burners to destroy all the garbage. Service for this pest could be sold as a part of apartment house contracts. Likewise individual houses with incinerators are good prospects for general service.

• Fabric Destroyers

Clothes moths usually accumulate in garments stored for long periods of time, and do most of their damage to soiled woolen clothing. Elimination of this source of infestation and storage of dry-cleaned clothes only, usually controls an infestation. An additional precaution is treating the walls, woodwork and cracks with a residual DDT or chlordane spray.

Many infestations of clothes moths call for the highest type professional service. We investigated one case, with a PCO, in which moths were coming from hair insulation around plumbing in the wall. Other sources of infestation have included such unlikely spots as the felts of an unused piano, hair padding on an unused bridge table, an old feather pillow stored in a paper bag, and a rag bag containing a long-forgotten woolen sweater. Usual places to look are trunks, bags and boxes containing woolens.

The carpet beetle, once a serious pest of wall-to-wall carpets, found tough going when kiln-dried hardwood floors eliminated cracks, scatter rugs came into fashion, and the vacuum cleaner picked up eggs and young larvae. Like many another insect, it found a cosier place to live. The accumulated lint in the crack underneath baseboards proved to be even better than the old-fashioned carpet. Partly-grown larvae love to migrate and eat soiled clothing. A thorough spraying of the lint underneath baseboards using DDT or chlordane usually takes care of this pest. It is definitely a profit possibility.

• Wood Attackers

Long-horned and bark beetles emerging from firewood might call for a direct or contact spray of the insects and the firewood.

Lyctus powder post beetles attack only hardwoods. Most infestations originate in curing lumber, and the beetles continue to grow after the wood has been used in buildings or furniture. Thorough treatment with a variety of materials will control Lyctus beetles. However, in most cases the unsightly appearance of the infested wood makes its replacement necessary. Suitable treating materials are (1) 9 parts turpentine and 1 part kerosene, (2) 5% DDT in oil, (3) 5% pentachlorophenol in oil, and, (4) the preservative "Super-Cuprinol". These are usually applied with a paint brush until the wood is saturated.

Anobiids and Bostrichids (furniture and death-watch beetles) keep on breeding in infested wood. They are most abundant in very old houses, or occasionally in relatively modern houses built of native lumber, which has not been kiln-dried. The usual remedy has been treatment of infested wood with one of the materials mentioned above. Recently methyl bromide fumigation has been suggested as a remedy.

The house borer, **Hylotrupes bajulus,** is a real problem. It is a native of northern Europe and is becoming very common. It is a long-horned borer which continues to breed in wood in houses and is potentially a much more serious pest than termites in the Northeast. Recently several hundred new houses in Connecticut were found infested. The source was traced to sheathing in a single shipment.

Europeans use heat to kill this pest. They install auxiliary furnaces and raise the temperature to 140°F. However, only remedy suggested here is a good methyl bromide fumigation, preferably using a gas-proof plastic cover over the entire house. Some home owners ready to try this fumigation have been unable to find a PCO willing to do the work. If this pest continues to spread someone can convert it to the profit side of the ledger.

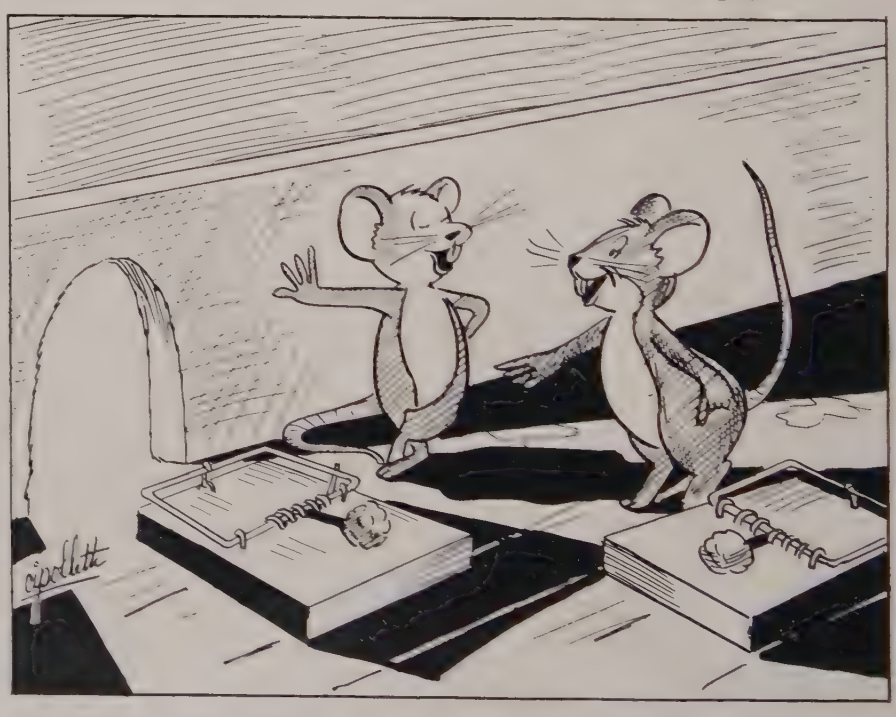
• Miscellaneous Pests

Booklice seem to be a problem, especially in new houses, or in buildings exposed to the weather. They are supposed to feed on fungi, and the best control is drying the structure so fungi cannot grow. Sprays will control booklice that are around, but have little effect if they are breeding in cracks, etc.

Silverfish are often common in houses where they feed on starchy material including wallpaper, books, and starched fabrics. The oatmeal - sodium fluoride - sugar salt bait works well. So does residual spraying with DDT. Silverfish control in bakeries is very important and requires careful application for good results.

Crickets can be controlled by use of poisoned bran bait. Field crickets invading houses can be baited in the basement and out-

(Continued on page 60)

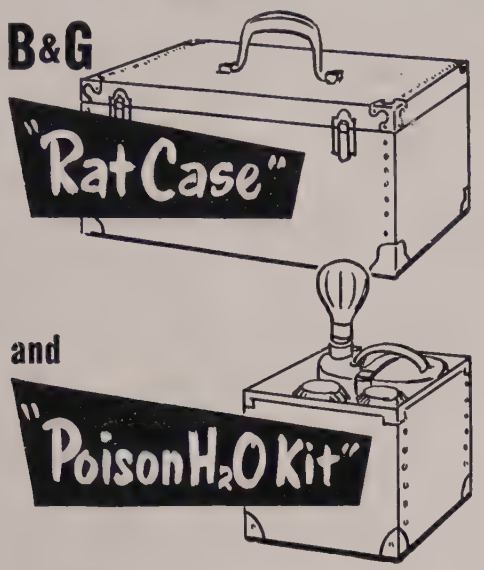


First Mouse: "Now which do you prefer . . . the Cheddar or the Roquefort?"
Second Mouse: "Neither . . . I prefer peanut butter!"

new convenience with ***B & G's***

COMPLETE SUPPLIES

for the RAT CONTROL EXPERT



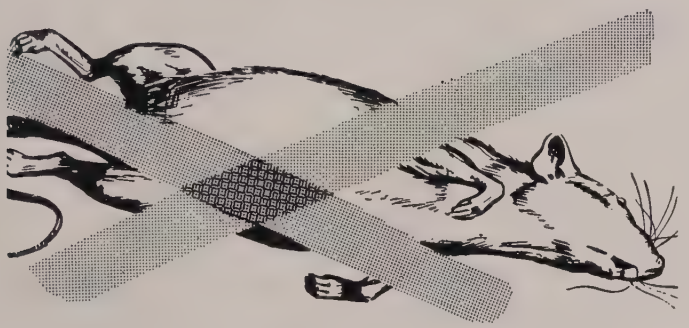
Item 1

The Professional Keeps All His Tools In One "Basket." Designed for your convenience, engineered for quick, easy, safe dispensing of hazardous rodenticides. Includes 1) **Carrying Case;** 2) **Poison H^2O Kit Carrying Case;** 3) **Rubber Jug with Filler Bulb;** 4) **100 Rat Jigger Rodenticide containers;** 5) **Two Heavy Duty Bait Buckets;** 6) **Two Bait Buckets.**

"B & G RAT CASE"
Equipped with Poison H^2O Kit. Items 1 to 6 $28.75

"POISON H^2O Kit"
B & G Poison H^2O Kit, which includes items 2, 3, and 4 complete in itself. $12.90

Item 2 RODENTICIDES



PRIVAL CONCENTRATE Safer, simple, effective. Lasts longer because of insecticidal-fungicidal activities.
5-lb. tins - $1.75 lb.; 25 lbs. - $1.65 lb.; 100 lbs. - $1.55 lb.
Freight pd. on 50 lbs. and over.

PRIVALYN CONCENTRATE Water Soluble Anti-Coagulant Rodenticide. Simple, easy, longer-lasting. Grain-bait companion, lasts 3-4 weeks even with sugar added because of mold-resistant action. One packet to 1 qt' water.
100 unit packets - 20c per packet
200 units - 18c per packet
400 units pre-paid freight.
* All prices F.O.B. Philadelphia unless otherwise noted

BULK SUGAR PIVALYN 2 tablespoons of sugar per quart of water improves acceptability of baits 10 to 1 over plain water. Save time & trouble.
50 lbs. - $1.50 lb.
100 lbs. - $1.39 lb.
Freight Prepaid

Item 3

PROFESSIONAL POISON DECALS

Easily applied, professional looking, add an "extra" measure of safety.

12 Decals	$1.00
3 Dozen	2.50
6 Dozen	5.00
1 Gross	9.50

(Postage Paid)

manufacturers and distributors of pest control products

B & G COMPANY

PLUMSTEADVILLE, PENNSYLVANIA

"Serving the Pest Control Industry"

RAT CONTROL on PUBLIC DUMPS

Figure 1. Good dump management provides that materials be segregated when brought to the grounds by private or municipal trucks.

by

GALEN C. ODERKIRK

ERNEST M. MILLS MILTON CAROLINE

District Agents

U. S. Fish & Wildlife Service

A PUBLIC DUMP is a haven for rats.

Rats will travel from rural dumps to nearby farms, or to business and residential sections if the dump is established in or at the edge of a city. Since rats damage property, contaminate food, and spread diseases to domestic animals and human beings, their presence on a public dump, whether in or near a city, constitutes a constant menace. Whether located on farms or on city properties the cost of maintaining each rat varies from two to four dollars a year.

Rats on dumps can be controlled by these three methods: (1) poisoning and gassing; (2) restricting garbage to certain areas on the dump where it can be buried by other waste that has no food value; and (3) by changing the disposal method from the open-dump to the sanitary land fill.*

If only one method is to be used, the sanitary land fill is most effective. However, since the initial cost of necessary equipment may be prohibitive for small communities, here are a few suggestions to help control rats without going to such expense.

• Dump Management Plan

Principal objective in a dump management plan is the restriction of the active dump face or dumping area to the smallest practical size so that edible material can be quickly covered. Dumping should be confined to a narrow strip, not over 60 feet wide, rather than spread without plan over a large fan-shaped area.

Here are the principal points to consider in following the plan as illustrated in Figure 2, page 26. Segregate the material that is placed on the dump in the following manner:

1. Confine the placement of garbage, tin cans, and other metal to the narrow leading face of the dump.

2. Place combustibles (wood and paper) about 30 feet from the active face. Burn daily, preferably at night. Continuous burning should be prohibited since it produces offensive odors. Do it at one time.

3. Dump coarse, non-combustible fill material such as stones, concrete blocks, etc., at the corner of the active face.

4. Unload fine fill, such as ashes, dirt, gravel, plaster, etc., in a pile about 50 feet from the active face and spread it over the side face with a bulldozer or other power equipment as the fill progresses. In the absence of power machinery spread the fine fill material over the surface and side face as it arrives at the dump.

If this plan is followed, and if the fill is not over four feet deep, exposed garbage will be held to a minimum and the dump will be compacted by the hauler's trucks. To finish, a two foot layer of soil and cinders should be spread on top.

When a new dump site is selected it must be accessible by an all-weather road. Prevailing winds should be in a direction away from the center of population. The type of site to be selected will obviously depend upon the available land. Swamps or other unused areas are generally adaptable.

It is necessary to make the public familiar with the dump management plan through newspapers and other publicity channels, so they will fully understand what their obligations and benefits are under such a system.

• Dumping Controls

Dumping activities should be surveyed to determine how many dumps are necessary at any one time. **Those that are not in constant use ought to be closed until they are needed.**

Haulers must be directed to segregate materials as far as possible when loading their trucks. The segregation falls into four groups: (1) combustibles such as wood and paper, tree trimmings, and leaves; (2) garbage, metal, and bottles; (3) coarse fill such as large stones and concrete; and (4) fine fill such as dirt, ashes, gravel, etc.

A caretaker or supervisor should be selected and trained so he can direct operations in accordance with the dump management plan. He must have either police power in order to legally enforce the plan or frequent police assistance should be provided until the plan is functioning smoothly. This is one of the many reasons why the local government should have legal

* Consult your State Health Department for advice on Sanitary Land Fill Methods. See U.S. Public Health Service Pub. No. 226 "The Sanitary Land Fill in Northern States." Rev. 3-53.

WARFARE on RATS with PENICK DETHMOR WARFARIN

.5% Concentrate - also - Water Soluble

EFFECTIVE

EFFECTIVE

ECONOMICAL

SAFE

S. B. PENICK & COMPANY

50 CHURCH STREET, NEW YORK 8, N. Y.
Telephone, COrtlandt 7-1970

735 WEST DIVISION STREET, CHICAGO 10, ILL.
Telephone, MOHawk 4-5651

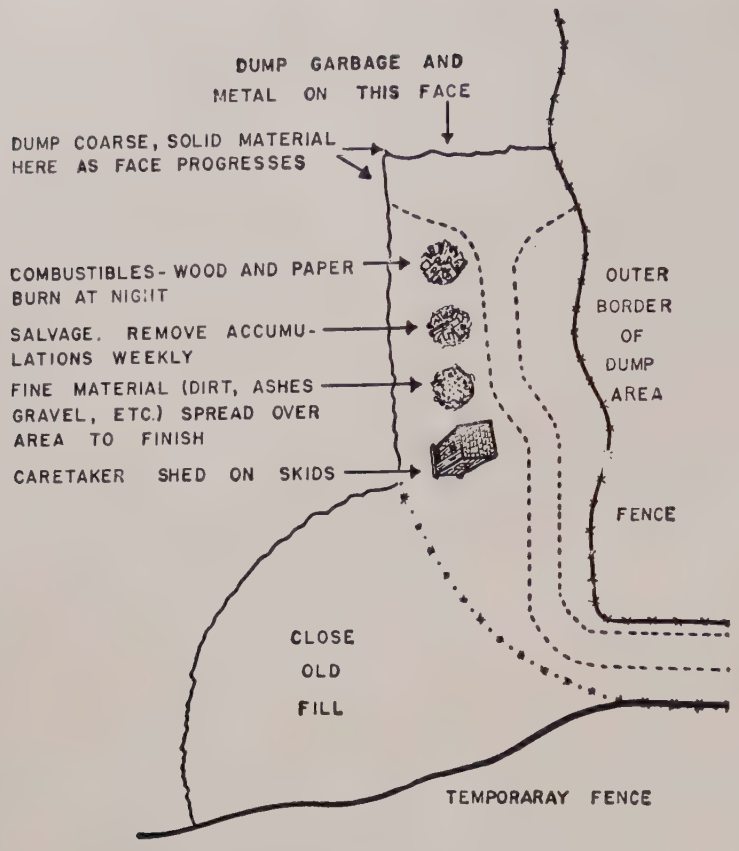

DUMP GARBAGE AND METAL ON THIS FACE
DUMP COARSE, SOLID MATERIAL HERE AS FACE PROGRESSES
COMBUSTIBLES - WOOD AND PAPER BURN AT NIGHT
SALVAGE. REMOVE ACCUMULATIONS WEEKLY
FINE MATERIAL (DIRT, ASHES GRAVEL, ETC.) SPREAD OVER AREA TO FINISH
CARETAKER SHED ON SKIDS
OUTER BORDER OF DUMP AREA
FENCE
CLOSE OLD FILL
TEMPORARAY FENCE

Figure 2. Strip-fill method of dump management

control of all dumps that serve the community.

Some communities pay their dump supervisors by permitting them to collect, store, and sell salvage material. This practice must be discouraged so far as possible since it detracts from the job of managing the dump properly.

A woven wire fence is effective in keeping a clean dump. Windblown paper will drift against the fence where it can be gathered and burned or burning can be done along the fence. The height, length, and position of the fence is determined by the terrain and the direction of prevailing winds.

• Poisoned Baits

Poisoned baits are the most efficient means of destroying rats. However, there is no single poison or method of application that will give 100% results. It is necessary to apply systematic treatments at intervals with a change in both poisons and baits.

Chief objection to poisons is the danger to human beings and domestic animals. The presence of children, scavengers, dogs, cats and birds may present a hazard when toxicants are carelessly and improperly applied. However, use of poisoned baits is a relatively safe procedure when common sense precautions are followed.

Place warning signs at the dump entrance and every 200 feet around the edges when poisons are being used. If houses are within 500 yards of the dump, advise residents to keep their children and pets at home during the poisoning operation. Public notices should be printed in local papers for several days preceding the date set for poisoning to warn all residents of the danger at the dump.

• Kinds of Poison

Here are the most effective and widely used of the current rodenticides.

Red Squill: Of all the rodenticides, this material is probably the least harmful to human beings and domestic animals. Most animals other than rats refuse to eat squill-mixed baits, but if they do, the bait will be vomited without serious effect It is essential to purchase the best grade of squill, with a minimum toxicity of 500 mg./kg., LD50. This may be purchased in powder or liquid extract form.

Antu (Alphanaphthylthiourea): Antu is highly toxic to brown rats, but since it is easily recognized by them they may not consume a lethal dose. This creates a tolerance to the poison so it is desirable to restrict its use to 3-4 month intervals. Dogs and pigs are very susceptible to this poison; cats and chickens less so. Humans appear to have a very high resistance to antu.

Zinc Phosphide: This poison is highly toxic to all animals and great care must be exercised in its use. However, few animals other than rats and mice have been poisoned with it. Its strong, pungent odor makes it unattractive to some domestic animals and pets.

Anticoagulants: Anticoagulants such as warfarin and pival kill rats and mice by causing internal bleeding. Several small doses, taken over a period of 3-10 days, are required to cause death. Baits containing anticoagulants should therefore be placed under the shelter of boxes so rats and mice have ready access to the bait at all times.

1080: (Sodium fluoroacetate): Every possible safeguard should be observed if 1080 is used on a dump. Dumps should be guarded against entry of human beings or domestic animals to the treated area while bait is exposed. Uneaten baits or receptacles in which bait is exposed should be collected and disposed of after treatment. Compound 1080 is used in the proportion of one ounce of the chemical to 28 pounds of food bait, or to prepare a liquid bait, one-half ounce of 1080 to a gallon of water, adding enough nigrosene black to discolor.

Thallium Sulfate: This rodenticide is a cumulative poison of high toxicity, without taste, smell, or other warning property. It is an effective, slow-acting poison requiring 12-20 hours to kill.

Dumps can be treated most economically by first exposing bait containing a fast-acting poison such as red squill or zinc phosphide, then following with a dry-mixed anticoagulant-poisoned bait. This procedure results in rapid reduction of infestations. Rebaiting, preferably with dry anticoagulants baits, at monthly intervals will keep the rodent infestations under control.

• Bait Formulations

All bait ingredients should be of good quality to compete successfully with food present on the dump. There is no "best" food or formulation. Meat and fish are choice types of food. Canned or frozen horsemeat can usually be purchased. Fresh scrap fish is available some places.

APPLY FLY CONTROL IN LESS THAN FIVE MINUTES*

New* ORTHO *Fly Killer Dry Bait offers tremendous time savings to P.C.O.'s. No preparation...no special equipment! Just scatter direct from container to ground.

Special* ORTHO *granule size gives longer-lasting control. Ordinary sugar baits are small and dissolve during the fly's feeding so they are soon dissipated. ORTHO Fly Killer Dry Bait granules are just the right size—small enough for easy feeding—yet large enough so that after the fly feeds on the granule he drops it and it remains available to other flies.

Flies stay in baited area. Flies pick up the ORTHO granules in their mouth parts, feed, and generally drop dead in that immediate area.

Kills both resistant and non-resistant flies: This product is a malathion formulation. *Economical:* 5 lb. bag covers up to 10,000 sq. ft.

Widespread usage: Use ORTHO Fly Killer Dry Bait to reduce fly population outdoors... around garbage collection and disposal areas, refuse areas, loading docks, service stations, drive-ins, ice cream stands, restaurants.

**Around average area to be treated.*

T.M. REG. U.S. PAT. OFF.: ORTHO

ORTHO

On all chemicals, read directions and cautions before use.

Call your nearest* ORTHO *sales office for full details and explanatory literature.

CALIFORNIA SPRAY-CHEMICAL Corp.

Portland, Ore.
Whittier, Calif.
San Jose, Calif.
Fresno, Calif.
Saramento, Calif.
Caldwell, Idaho
Maryland Heights, Mo.
Oklahoma City, Okla.
Orlando, Fla.
Phoenix, Ariz.
Shreveport, La.
Maumee, Ohio
Linden, N.J.
Medina, N.Y.
Goldsboro, N.C.

Executive Offices: Richmond, Calif., Washington, D.C.

Canned fish, such as menhadden, can be procured at low cost in case lots. Dry bread crumbs obtainable from bakeries, corn meal and other dry foods are well accepted and inexpensive.

Here are the recommended bait formulations for rat control on dumps:

Baits

Lean, ground horse meat, ground fresh fish, or canned fish	70 lbs.
Rolled oats (acts as an extender, but may be omitted. If so, increase meat or fish by 20 lbs.)	20 lbs.
Flour (any kind) if using Antu or Zinc Phosphide	5 lbs.
Water—add enough to make bait quite moist. A large amount is needed if rolled oats are used.	

Poison (add only one)

Red squill—10%	10 lbs.
Antu—1½%	1½ lbs.
Zinc Phosphide—1%	1 lb.
Anticoagulant (.5% concentrate) 5%	5 lbs.

In mixing dry, permanent baits with anticoagulants for exposure in stations or boxes, use the per cent of poison indicated and add 5% mineral oil to prevent dusting.

Any estimate of the amount of bait required may be considerably affected by changing conditions. Ordinarily from 50 pounds to 100 pounds of prepared bait is ample to treat an average-size town or city dump. An estimate can be made by figuring one pound of bait for every linear yard of dump face.

• Bait Placement

Use a long-handled spoon to place (not throw) baits near burrows, beside trails, under boxes, etc., where rats will easily find them. Be liberal with bait in making a treatment. Place baits under a protective cover of rubbish, or make ledges under which they will be shielded from rain and snow.

Figure 3. Signs should be prepared and set on movable posts so that haulers will know where to dump each type of material. Signs are particularly helpful where there is no supervisor.

• Feeding Stations

Bait stations protect baits from weather, provide rats secure places to feed, and prevent domestic animals and human beings from consuming or disturbing the toxicant.

Feeding stations can be used on dumps with good results. They are particularly effective as a follow-up of dump-wide treatments. Two to four well located bait stations will aid materially in keeping rat populations under control on an average-size dump.

When constructing stations it is best to use a box with no bottom, raising it to allow a space of 2½ to 3″ (no more) beneath for rats to enter. Use a large box, preferably at least 3′ wide by 4′ long and 12 to 20″ in height. It is best to set a few screws in the top rather than to have a hinged cover. To hold the station in place, drive four 2″ x 4″ stakes solidly into the ground at each corner of the box and nail it to the stakes. Use pans, chick feeders, or other containers to hold a supply of bait material. It is advisable to paint an appropriate warning on the box.

• Rat Control With Gas

Gassing with calcium cyanide is often an effective method of killing rats in burrows. It produces excellent results where rat burrows are scattered at the edge of dump areas, but is impractical for application in an active dump face due to the loose nature of the fill which will not retain the gas.

Calcium cyanide is a light grey powder that releases hydrocyanic gas when it comes in contact with the air. It produces most effective results with temperatures above 60°F. The powder is best applied with a foot-pump type duster that is made especially for this material. Care should be exercised in the use of this method.

• Dump Abandonment

When refuse and intermingled garbage are no longer brought to a dump, rats will travel to other areas in search of food. To prevent this migration, distribute poison over the entire area prior to and after dumping ceases. Then apply calcium cyanide dust to rat burrows. Within a week after the dump is closed the active face should be covered with earth. If this is thoroughly done, rat extermination will probably be complete.

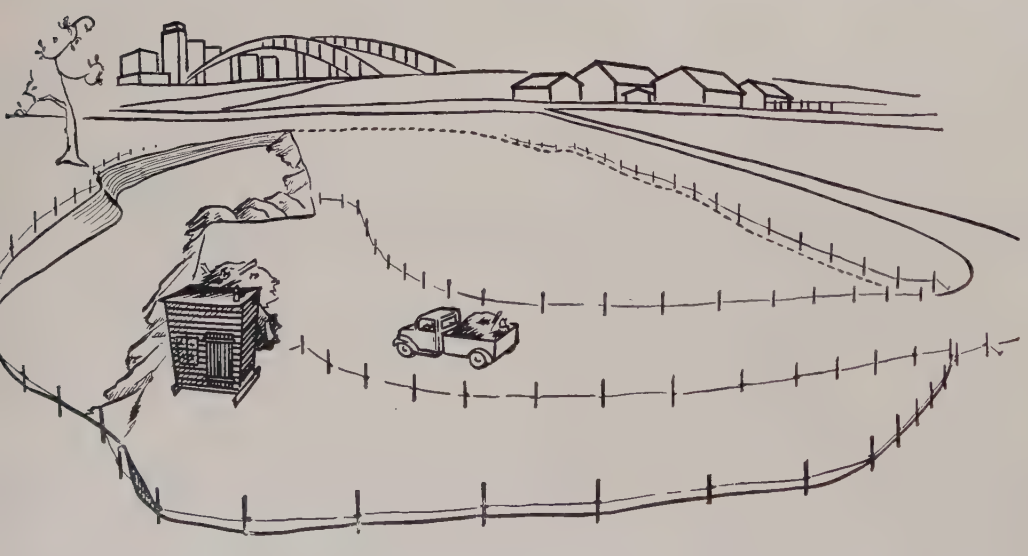


Figure 4. A movable guide fence which directs traffic toward the dumping area can be made of a single strand of rope, cable, or wire attached to iron posts. This limits dump maintenance.

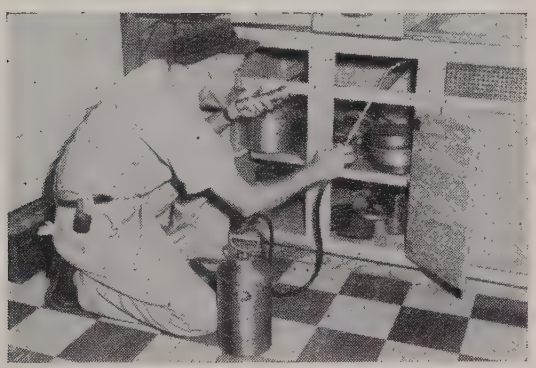
Canada to Host Entomologists

The Tenth International Congress of Entomology will be held in Montreal, Canada, August 17-25, 1956. All those hoping to attend the Congress and wishing to obtain further information should communicate as soon as possible with the secretary, J. A. Bownes, Division of Entomology, Science Service Building, Ottawa, Ontario, Canada.

We're so proud we're bustin' our buttons... because

B & G Professional Sprayers ARE FOUND IN THE BEST PLACES!

FULLY GUARANTEED



You'll find the B & G label well represented in the more than 60 different kinds of pest control equipment Orkin operators use!

ORKIN "Serving 47 Million People"

B & G Serves Scores More PCO's In Spreading Sanitation . . . . . Protecting Health

A partial list of B & G Customers

Ardee Maintenance Corp.
Aser Exterminating
Corley Pest Control
Getz Exterminating Co.
Harder Ext. Co.
Illini Pest Control
L. A. Moore Co.
Lien Chemical Co.
Lystad & Redick
Mac Griffin, Inc.
Montgomery Pest Control
New England P. C.
Nolen Economy Ext.
Oser Exterminating
Paramount Exterminating
Rose Exterminating
Smithereen Co.
Theo. Meyer Estate
Vogel-Ritt, Inc.
Western Ext.
Wil-Kil Pest Control

- LIGHT WEIGHT, STAINLESS STEEL TANK
- ELECTRICALLY WELDED SEAMS
- QUICK, SURE SHUT-OFFS
- TROUBLE-FREE ALL BRASS FITTINGS
- OIL AND CHEMICAL RESISTANT HOSE
- PRECISION SPRAY PATTERNS

ONE GALLON
One gallon stainless steel tank, brass pump unit, adjustable carrying strap, brass shut-off valve, 4-ft. hose unit, 9" angled brass extension, and fan pattern nozzle. Model 100-S $24.50

With Versatile Multeejet Nozzle
Have four different types of spray patterns in one nozzle simply by rotating tip and tightening retainer ring with finger pressure.
Model 104-S $27.23

TWO GALLON
Two gallon stainless steel tank, brass pump unit, adjustable carrying strap, brass shut-off valve, 4-ft. hose unit, 18" angled brass extension, and fan pattern nozzle.
Model 200-S $29.75

With Versatile Multeejet Nozzle
Four types of spray patterns in one nozzle. Simply rotate tip and tighten retainer ring with finger pressure.
Model 204-S $32.50

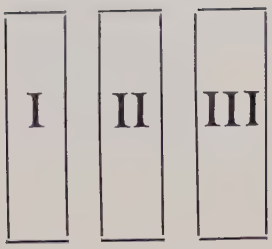
Manufacturers and Distributors of Pest Control Products

B & G COMPANY

Plumsteadville, Penna.

"Serving the Pest Control Industry"

Book Review



"Control of Rats and Mice"

Volumes I, II, and III

edited by

Dennis Chitty and H. N. Southern

Reviewed by H. J. Spencer, Gainesville,, Florida

The three volume work entitled "Control of Rats and Mice" is a comprehensive treatise of the research conducted by the Oxford University Bureau of Animal Populations under the auspices of the Agricultural Research Council. This research program was undertaken in 1939 when war between England and Germany appeared inevitable and was continued uninterrupted throughout the subsequent involvement of the Second World War until completed in 1947. Problems surrounding the publication of the findings of this extensive research program were eventually overcome in 1954 through the generosity of the Delegates of the Clarendon Press and an anonymous benefactor.

The substance of this treatise deals largely with the commensal rodent problem and its control in Great Britain. Volumes I, and II cover research on the biology and control of the brown rat (R. norvegicus). Only limited consideration was given to the study of the control of roof rats (R. rattus) for reason that infestations had receded gradually since before the middle of the Eighteenth Century and now constitute but a minor problem in coastal areas. Roof rats, at the same time, proved amenable to the same control methods as brown rats. Volume III deals almost exclusively with the biology and control of the house mouse (M. musculus).

The three-volume work of the Bureau of Animal Populations covers almost every aspect of the biology and control of rats and mice in Great Britain and the Middle East in well-organized textbook form suitable for instructional and reference purposes. A complete reference bibliography by chapters is given.

Volume I begins with a chapter on the organizational aspects of the research program. This is followed by a discourse on the properties of rodenticides. Zinc phosphide, arsenious oxide, red squill and barium carbonate, listed in order of preferential use, form the bulwark of poisoning operations as conducted in the British Isles. Phosphorus and ANTU also are used to a lesser extent, but mainly in proprietary baits. Thallium and sodium fluoroacetate (1080) the more highly toxic and hazardous poisons are not utilized. Strychnine as a rat poison has been illegal in Great Britain since 1935. The anticoagulant rodenticides were yet undeveloped at the time of these investigations.

• Bait Stations Evaluated

The utility of several types of poison bait exposure stations are evaluated. The researchers concluded that use of bait stations for exposure of single-dose poison baits are impractical because of the behavior patterns of rats to poison baits. They did, however, point out that bait stations prove of value to a limited extent in connection with the employment of the prebaiting-poisoning technique in certain habitats.

Study of the habits and reactions of brown rats as regards poisoning operations is taken up in the greater portion of **Volumes I and II.** Methods of evaluating the efficiency of poisoning operations are described, and factors influencing rodent acceptance of baits are cited. "New Object Reaction" of rats to changes in their environment was noted to affect visitation to bait stations and the consumption of bait. Wet poison baits were eaten in greater quantity than dry baits and the average daily consumption of wheat per rat was found to approximate one ounce. Under the influence of poison action there was a visible change of behavior in rats toward further bait acceptance amounting to hesitation at first, followed by more or less complete refusal. Generally, rats followed four rules in their approach to successive baits: (1) an identical poison bait was refused, (2) a new poison in a bait harmfully experienced was refused, (3) an experienced poison in a new bait was mostly accepted, and (4) a new poison in a new bait was accepted.

• Rural Rat Control

Rural rat control consisted of prebaiting on the first and third days followed by exposure of poison bait on the fifth day. Four pre-baitings instead of two in advance of poison bait exposure appeared to give better control of rodent infestations in corn ricks. Block (county-wide) control of rats using the 1-3-5 (day) prebaiting and poisoning system was found to be practical and economical. Control of rats in sewers was accomplished by employing a "bait depositor" lowered on a cord at the manholes.

The roof rat (R. rattus) is the common rat of the Middle East with the brown rat being confined to the larger coastal towns. Roof rats were found to be more resistant to some poisons than the brown rat, and failures with red squill suggest that this rodenticide is unsatisfactory for use against this species.

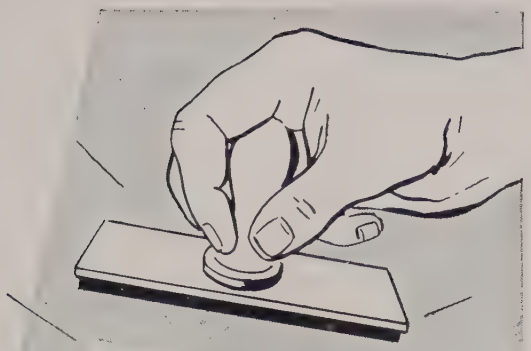
• Mice Covered in Vol. III

Volume III deals with research on the biology, ecology and control of the house mouse (M. musculus). Evidence discloses that different infestations of house mice have varied underlying causes for their existence and require different treatments for control. The story of the house mouse as a pest is related at length in a single chapter and methods of control other than poison are described in another. Zinc phosphide was found superior to arsenious oxide and red squill in the control of mouse infestations.

Study of the feeding activity of house mice disclosed that a 24-hour rhythm is quite well-defined with the greater activity appearing between the hours of 8 p. m. and 9 p. m., thereafter receding to a moderate level during the balance of the night until just before dawn when feeding falls off to a minimum and continues this way during the daylight hours.

Numerous aspects of the feeding habits of mice conducive to observed variations are brought

New Safe Insect Control FOR SERVICING THE FOOD INDUSTRY



ACCEPTED AND APPROVED by U.S.D.A.

WHEN YOU BUY Niagara YOU BUY PROTECTION

Pyrenone*

*Reg. U. S. Pat. Off.

606 SPRAY

Kills on Contact!

All These Insects

Fruit Flies (Drosophila)
Common Flies
Grain Moths
Gnats—Roaches
Silverfish—Crickets
Spiders—Wasps
Ants—Mosquitoes
Cheese Skippers
Cheese Mites

Oil-Free, Non-Toxic

The U.S.D.A. has approved Niagara Pyrenone 606 Spray for insect control in food processing and food handling establishments.

This new formulation is an oil-free emulsifiable concentrate containing 60 per cent piperonyl butoxide and 6 per cent pyrethrum. *It is non-poisonous and non-injurious!* This is most important in view of the Miller Bill insecticide residue tolerances on food.

Pyrenone 606 is easy and economical to use. Just dilute with water and apply with ordinary spray equipment. For literature and prices see your supplier of Niagara agricultural chemicals, your Niagara field man or write us.

Niagara CHEMICAL DIVISION

FOOD MACHINERY AND CHEMICAL CORPORATION

Dept. 51-H, Middleport, New York

WHEN YOU BUY Niagara YOU BUY PROTECTION fmc *Trade Mark

out. The food bait preference of mice is discussed at considerable length. Mice indicate a preference for cereal baits with rolled oats ranking over all other cereal grains, and bait containing oil as an additive is superior to bait without oil. As in the case of rat control, moist bait was found more effective in the control of house mice than dry baits.

Various behavior patterns of house mice to poison bait, and conditions surrounding control of mice under favorable, unfavorable, and homogeneous environments along with dangers and precautions involved therewith, are cited. The treatise on the control of house mice is brought to a close with a discourse on carbon dioxide fumigation for house mice.

• Available From Pest Control

"Control of Rats and Mice" Volumes I, II and III, was published late in 1954 and contains a total of 1066 pages. It can be purchased by sending a check or money order for $17.40, which includes postage, to Book Department, Pest Control magazine, 1900 Euclid Avenue, Cleveland 15, Ohio.

Minn. Grain Insect Pamphlet

"Control of Stored Grain Insects in the North Central States" is the title of a recent publication of the Minnesota Agricultural Experiment Station.

Three geographical areas are designated according to the relative hazard to farm-stored grain from insect attack. Roughly the northern third has the least hazard, the southern third most.

Protective measures suggested are construction of good storage structures, clean-up of premises, control of moisture content, careful cleaning and drying of grain, maintaining cool grain temperatures, cleaning and spraying of storage facilities, use of protective powders, fumigating, inspections, and the turning and cleaning of grain.

A brief section is included on protection of grain in elevators dealing with sanitation of premises, clean-up, fumigation, and control of moisture and temperature.

Single copies of this publication will be sent to PCOs free on request. Just write Bulletin Room, University of Minnesota, Institute of Agriculture, St. Paul 1, Minn., and ask for Bulletin 425.

DOW

Announcing a major development in the fumigation of bulk grains . . .

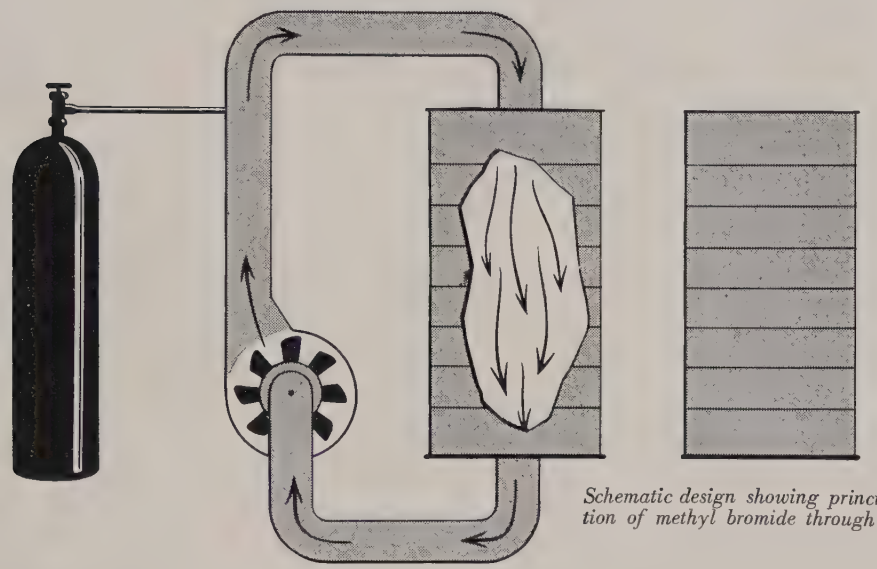
QUICK! UNIFORM! SURE! CUTS MATERIAL COSTS 50%

It is now possible to fumigate grain with methyl bromide in silo-type grain elevators.

Dow's new forced recirculation method enables the operator to send an even flow of methyl bromide air mixture through the grain mass at a given rate per bushel per minute. The new process is quick, uniform, sure. It takes the guesswork out of grain fumigation because it is *engineered* to make fumigation of bulk commodities an exact science. Controlled distribution of methyl bromide means lower dosages . . . *cuts material cost at least 50 per cent* . . . and results in a complete kill of all insect life in the bin.

Dow was the first fumigant manufacturer to work on this important new process. We have tested the forced recirculation method using methyl bromide in many types of installations for more than seven years. As a result, Dow is an authoritative source of information and technical assistance. This is a major development in the fumigation of grains and should also have application in the fumigation of peanuts, popcorn and other materials stored in bulk . . . a profitable new service tool for *you*. Our tests have proved conclusively that when the installation is properly engineered and the amounts of methyl bromide are correct—*there is no question about results.*

NEW FORCED AIR RECIRCULATION PROCESS DISTRIBUTES DOW METHYL BROMIDE UNIFORMLY THROUGHOUT THE BIN ... ELIMINATES GUESSWORK



Schematic design showing principle of recirculation of methyl bromide through silo bin.

ENGINEERING SERVICE IS AVAILABLE

Roughly, the new method involves a permanent or semi-permanent installation for the recirculation of lethal concentrations of methyl bromide throughout the grain mass. We have adapted the process to both silo-type storages and to bulk shipments of grain under quarantine in freight cars. This important new method is now ready to help you give your stored commodity accounts maximum fumigation effectiveness. You are invited to take advantage of Dow's engineering service on the installation of recirculation equipment utilizing methyl bromide. A Dow fumigation technician will gladly accompany you to your clients' storage facilities for consultation and assistance. Write our Fumigant Sales Section. THE DOW CHEMICAL COMPANY, Midland, Michigan.

you can depend on DOW FUMIGANTS DOW

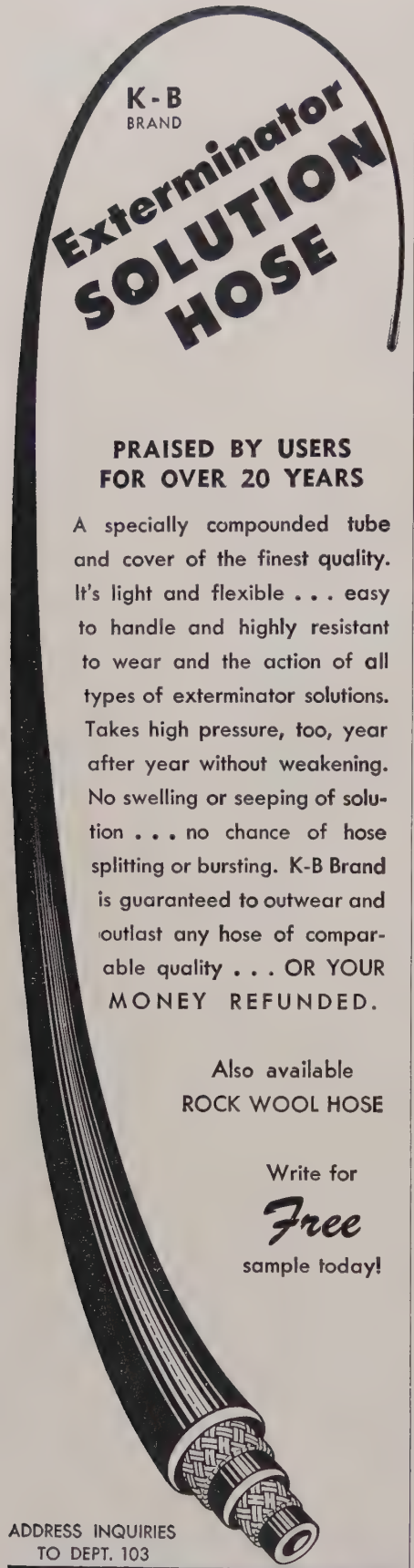
K-B
BRAND
Exterminator
SOLUTION
HOSE

PRAISED BY USERS
FOR OVER 20 YEARS

A specially compounded tube and cover of the finest quality. It's light and flexible . . . easy to handle and highly resistant to wear and the action of all types of exterminator solutions. Takes high pressure, too, year after year without weakening. No swelling or seeping of solution . . . no chance of hose splitting or bursting. K-B Brand is guaranteed to outwear and outlast any hose of comparable quality . . . OR YOUR MONEY REFUNDED.

Also available
ROCK WOOL HOSE

Write for
Free
sample today!



ADDRESS INQUIRIES
TO DEPT. 103

BROADWAY
RUBBER CORPORATION
Louisville 2, Kentucky

Our Experience

with Malrin for

German Roach Control

By CLAYTON and DICK WRIGHT
C. Wright and Associates, Dallas, Texas

AN UNUSUALLY heavy infestation of German roaches **(Blatella germanica)** in Dallas, Texas homes was called to our attention in August 1954. The infestation occurred in a veterans' housing area consisting of 12 two-story frame buildings. Each building contained twelve apartments, totaling 144 units in all.

The residents had been spraying with various proprietary household insecticides, much of which was furnished at no charge. Despite consistent and increasing use of sprays, vaporizers, traps, etc., the roaches had rapidly increased in numbers until they were practically "over-running" some of the apartments.

The first step taken was to trap some of the roaches and test their susceptibility to chlordane, a chemical which for several years has given outstanding control of this roach. The roaches from these apartments were termed the Dallas C-9 collection and were found to be highly resistant to chlordane, curve (b), Figure 1. Their degree of resistance was even greater than the Corpus Christi resistant colony (NPCA), curve (c).

The new experimental material Malrin* had proved highly effective against all strains of resistant German roaches to date, and was therefore tested against this C-9 collection. The results indicated that Malrin was highly effective against this C-9 strain, curve (b), Figure 1.

Through the cooperation of the Dallas Housing Authority and Health Department, arrangements were made to treat the entire 144 apartments with Malrin on a routine, six month control basis. Treatments were made at monthly intervals using a B & G 107 sprayer with 50015 fan nozzle. The usual wet spray procedures were employed, with the bulk of the insecticide being applied to the kitchen areas.

Four different Malrin mixtures were used as follows:

55% Malrin Premium Grade Emulsifiable Concentrate
8 fl. oz./gallon water
16 fl. oz./gallon water
24 fl. oz./gallon water
55% Malrin Premium Grade Oil Soluble
8 fl. oz./gallon water

At the time of each treatment, an estimate was made of the number of German roaches in each apartment. Each apartment was also given a sanitation rating of "Excellent", "Fair", or "Poor".

All apartments were first treated last September 30 using 2 pints of finished spray material per unit. Subsequently, at monthly intervals, each apartment was retreated using approximately 1 pint of finished spray. An information and data card was kept for each apartment throughout the six month period.

A comprehensive summary of

*Malrin is defined as being composed of 66⅔% technical 1, 1-dichloro-2, 2-bis (p-ethylphenyl) ethane and 33⅓% technical O, O-dimethyldithiophosphate of diethyl-mercaptosuccinate. Pat. App. 449342.

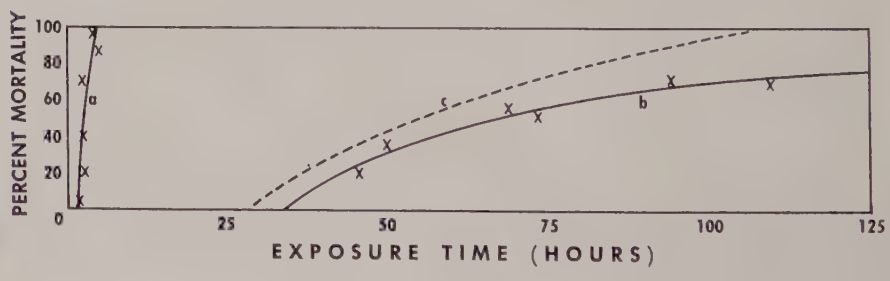


FIGURE 1. **Comparison of Malrin and Chlordane against the Dallas C-9 Collection. Curve (a): Malrin at 100 mg/sq. ft. Curve (b): Chlordane at 100 mg/sq. ft. Curve (c): Chlordane at 100 mg/sq. ft. against resistant roach of Corpus Christi.**

For Professional Results

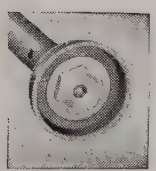
Get All 3!

1. No Drip
2. Uniform Discharge Pressure
3. Uniform Droplet Size

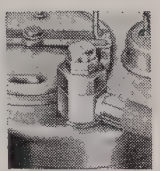
USE

HUDSON X-Pert* SPRAYERS

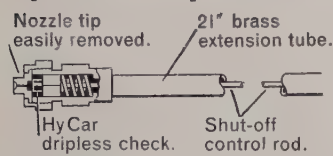
with MiniMax* Spraying System



Pump valve limits tank pressure.



Valve regulates discharge pressure



No dripping — HyCar check shuts off spray at nozzle tip.

Minimax Spraying System is the ultimate in precision spraying. It consists of: 1. A valve that signals when tank pressure is 55 lbs. 2. A valve that holds nozzle pressure at a constant 25 lbs. for uniform spray pattern, correct droplet size. 3. Drip-Not* valve that shuts off positively at nozzle, allowing no drip whatsoever.

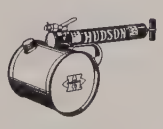
Other outstanding X-®Pert features: Simplex Inner-Seal* closing — "the higher the pressure, the tighter the seal" . . . Tubular strainer at control valve . . . Large tubular handle (also stores nozzle tips) . . . Footrest . . . Nu-Action* pump . . . Welded tank . . . 5' of Kem-Oil* hose. 3 or 4 gallons, stainless or galvanized steel tank.

Other Hudson Sprayers for Professional Use

Saf-T-Lok* X-Pert 2 gallons

Electric Sprayers

Eclipse*—All Stainless Steel



Capital® 3-Qt. Compression Sprayer

SIGN OF THE BEST BUY

HUDSON

For Complete Information Write

H. D. HUDSON MANUFACTURING COMPANY
589 East Illinois Street
Chicago 11, Illinois

*Trade Mark

Here's a "Team" For . . .

Better Rodent Control Everywhere

Hopkins REDI-MIX PELLETS

Get increased efficiency and double barreled results with HOPKINS PELLETS AND AQUA-DETH.

Service men everywhere like to use HOPKINS REDI-MIX WARFARIN PELLETS. They are clean—easy to use and—economical. Plus, they are a profesional looking bait and do give efficient quick control. MAKE IT EASY FOR RODENTS TO FIND WATER. USE . . .

Hopkins AQUA-DETH

Water soluble WARFARIN in dosage packets. One package makes a quart of lethal water bait. Place with REDI-MIX PELLETS in bait station for double-barreled results. A combination that gives quick control—makes satisfied customers—happy service men. Also available in 5 lb. bags with handy measuring spoon.

Get set for fly control problems. USE . . .

HOPKINS MALATHION

Your head needn't be buzzing with flies like our friend's. Use HOPKINS MALATHION, "One of the safest insecticides to handle." It's safe for you but deadly to flies, EVEN FLIES RESISTANT TO DDT—LINDANE — METHOXYCHLOR. When used as a sugar-bait spray, you get good, residual control for up to 30 days. Malathion is also one of the most effective Clover Mite controls. Available also as a 25% wettable powder.

Hopkins AGRICULTURAL CHEMICAL CO.
740 WILLIAMSON ST., MADISON, WISCONSIN

the data is given in Table 1. The more important conclusions which can be drawn from this data are given in terms of the following variables: (1) degree of control, (2) concentration of Malrin, (3) oil-base or emulsion, (4) degree of infestation (estimated number of roaches), (5) sanitation.

• Degree of Control

The degree of control is given in Table 2 in terms of the **number of treatments at thirty-day intervals required to free the apartments of roaches.** Summarizing all the treatments using the emulsion form of Malrin shows that roaches were eliminated from 70% of all apartments with one treatment; from 95% with two treatments; and from 100% with three treatments.

• Malrin Concentration

The control results at different concentrations of Malrin emulsion are shown in Table 3. Two treatments were sufficient for control in all apartments using the higher concentrations. Three apartments required a third application of the 8 oz./gallon dilution.

• Oil Base vs. Emulsion

Laboratory results with oil-base sprays of Malrin and other insecticides have shown that higher concentrations or larger volumes are required to produce residual control equal to that provided by emulsions of like materials. This is also borne out by these field results, Table 1. In apartments treated with 8 oz. 55% Malrin oil-base per gallon of refined oil solvent, seven out of a total of 27 required more than three applications. By comparison, all apartments treated with an equal amount of emulsion were free of roaches after three applications. This difference is believed to be due primarily to the excessive absorption of the oil by treated surface thus leaving less insecticide on the surface for contact with the roaches.

• Degree of Infestation And Sanitation

It is interesting to note the correlation between the infestation (number of roaches) of each apartment and the general level of sanitation, Table 4. As expected, poor sanitation leads to heavier infestation; conversely, sanitation alone is generally not sufficient to maintain a premises free of roaches, especially in the face of a condition wherein the roaches have developed a tolerance to the available insecticides.

When treating with the water emulsion, the degree of infestation and the sanitary level did not appear to be important as far as obtaining control was concerned. However, with the oil solution an average of 3.7 treatments were required in the "Poor" sanitary group while 1.2 treatments were required in the "Excellent" group, Table 1.

55% Malrin Dilution	Sanitary Environment of Apartment	Total No. of Apartments	Average No. of Roaches	Number of apartments with indicated number of roaches (estimated) before treatment						Number of apartments requiring indicated number of treatments to eradicate roaches						Average No. of Treatments Required For Control
				Number of Roaches Per Apartment						Number of Treatments						
				0	100	500	1,000	1,500	2,000	0	1	2	3	4	5	
8 ounces per gallon emulsion	Excellent	1	0	1	0	0	0	0	0	1	0	0	0	0	0	—
	Fair	27	760	7	0	0	20	0	0	7	9	9	2	0	0	1.7
	Poor	7	1200	0	0	0	4	3	0	0	4	2	1	0	0	1.6
16 ounces per gallon emulsion	Excellent	2	0	2	0	0	0	0	0	2	0	0	0	0	0	—
	Fair	31	750	5	1	10	12	0	3	5	21	5	0	0	0	1 2
	Poor	3	1000	0	0	0	3	0	0	0	0	3	0	0	0	2.0
24 ounces per gallon emulsion	Excellent	0	—	0	0	0	0	0	0	0	0	0	0	0	0	—
	Fair	34	550	8	5	11	8	1	1	8	18	8	0	0	0	1.4
	Poor	3	1100	0	1	0	1	0	1	0	3	0	0	0	0	1.0
8 ounces per gallon oil solution	Excellent	6	670	0	0	5	0	1	0	0	5	1	0	0	0	1.2
	Fair	23	610	8	0	6	6	2	1	8	6	6	0	1	2	2.2
	Poor	7	1200	0	0	1	4	1	1	0	0	1	2	2	2	3.7
	TOTALS:	144		31	7	33	58	8	7	31	66	35	5	3	4	

TABLE 1: Comprehensive Summary of Results of field tests with Malrin in 144 apartments for the control of Chlordane-resistant German roaches, 1954 - 1955.

Number of Applications	Number of Apartments	% Apartments Freed of Roaches
One	61	70%
Two	18	95%
Three	3	100%

TABLE 2: Degrees of control vs. the number of Malrin applications.

Concentration oz. 55% Malrin Per Gallon	Equivalent Concentration mg/sq. ft.	No. of Apts. Treated	% Apartments Requiring Indicated No. of Treatments		
			1	2	3
8 oz.	150	27	48%	41%	11%
16 oz.	300	29	72%	28%	—
24 oz.	450	29	72%	28%	—

TABLE 3: The number of treatments required to free apartments of roaches using three concentrations of Malrin emulsion.

Sanitation	No. of Apartments	Av. No. Roaches per Apartment	Apts. with no Roaches, %
Excellent	9	450	33%
Fair	115	670	24%
Poor	20	1160	0%

TABLE 4: Comparison of Degree of Infestation of German Roaches with the General Level of Sanitation.

• Summary

Detailed data was kept on a six month control program involving 144 apartments infested with chlordane-resistant German roaches. Effective control was obtained using Malrin in B & G hand sprayers on monthly treatment intervals. Control comparisons were obtained as a function of (1) concentration of Malrin, (2) type of carrier (oil-base or emulsion), (3) sanitation, (4) degree of infestation.

Both **The NEW**

ORB THREE POUNDER

and the Regular

ORB Industrial Aerosol Bomb

give you these advantages

FOR FLY CONTROL

1. **100% PYRENONE* FORMULA.** Completely safe and highly effective.
2. **CONCENTRATED FOR ECONOMY.** Contains 4.0% piperonyl butoxide plus 0.5% pyrethrins.
3. **CONTROLLED PARTICLE SIZE.** Extremely small aerosol particles.
4. **REGULATED OUTPUT.** Sprays longer — Lasts longer.
5. **LOW OIL CONTENT.** No contamination. No oily residue.

* Reg. U. S. Pat. Off. F.M.C.

Each Orb Three Pounder will operate continuously for about 40 minutes and treats 900,000 cubic feet of space. Each regular size ¾ lb. Orb Bomb operates continuously for about 9 minutes and treats 226,000 cubic feet. Both with disposable containers. Both equally effective.

Write Today for Prices and Details

REGULAR ORB BOMB

Be Sure to Get the Dope on ORB LINSPRAY . . . It's Terrific!

Absolutely odorless — ready to use Lindane in oil — priced so low you can afford to use it.

ORB INDUSTRIES P. O. Box 589 Media, Penna.

NPCA CONVENTION NEWS

National Pest Control Association
23rd Annual Convention
October 16-20, Denver, Colorado

•

Robert R. Schendel, National Chairman
Maurice Oser, Local Chairman

•

Local Committees Step Up Conventions Preparations

Eight hard-working PCOs are now putting into action the plans they have been making for a smooth-running NPCA convention come October.

William B. Lowrey, from Denver, and E. B. Hutchinson of Pueblo, are in charge of the entertainment program outlined last month.

Julian H. Oser, son of local convention chairman, Maurice Oser, is to handle registration, while dad also works on publicity.

Denver PCOs William A. Anger and Harold N. Peterson are lining up commercial firms who wish to take advantage of the exhibit space that will be available.

Transportation problems will be handled by Harold N. Peterson of Denver and Byron O. Reid heads up receptions and Sergeant at Arms duties.

Mr. Reid has joined with Maurice Oser and Bill Lowrey to make arrangements for post convention trips, of which there will be several. One tour will go to Colorado Springs, famous resort town and home of the new U. S. Air Force Academy, which is currently under construction. Another trip will send delegates to the beautiful Royal Gorge at Canon City.

Mrs. Maurice Oser is in charge of arrangements for the ladies program which looks like something the fair sex will remember for years to come.

GRAIN SANITATION, FHA DEVELOPMENTS, RAT CONTROL, RESISTANCE, PROGRAMMED

Latest news from headquarters unveils most of the topics to be covered during the 23rd annual National Pest Control Asociation convention to be held in Denver, Colorado. October 16-20.

Where the PCO can best fit into the grain sanitation program now being reactivated by the U. S. Department of Agriculture and the Food & Drug Administration will be one of the key sessions to be directed by an official from the USDA's Stored Products division and the NPCA's sanitation committee. Does the PCO have a rightful place in helping farmers and warehousers keep out of trouble with enforcement agencies? That's the question experts will answer. How to make this work profitable is another angle to be covered.

Of major interest to the termite control segment of this industry is a progress report on the NPCA-Federal Housing Administration effort to obtain government approval for soil pre-treating in newly constructed homes to prevent termite attacks later. A representative from the Forest Service is expected to explain the problems involved and how close they are to becoming solved.

Resistance in insects, an increasingly important deterrent to effective control, will be the subject of another session. Special emphasis this year is to be placed on fleas since increasing numbers of inquiries have come into the NPCA office on discovered resistance by this pest. An expert from the USDA's Entomological Research Branch will explain latest research findings and answer questions.

Proximity of the Fish & Wildlife Service's Wildlife Research Laboratory to the convention site gives delegates an unusual opportunity to tap the excellent counsel of researchers stationed there. One whole day is to be given over to rat and mice problems with a half day devoted to formal addresses by F&WLS experts and the remaining time to a tour of the research lab plus a closing question-and-answer session.

Roy Pence, professional entomologist - photographer from the University of California, will show some of the special slides he is making for use by NPCA members and will demonstrate some unusual examples of 3-D insect photography.

One half-day will be spent on business problems with special emphasis on proper methods for determining service costs.

Another highlight of the formal program may possibly include a talk on weed control, especially in relation to its effectiveness in rodent elimination.

It is expected speaker confirmation will be received in time for next month's convention news to be found on this page.

3 Hotels House Delegates

Since no one Denver hotel is large enough to handle the better than 600 delegates who are expected to attend this year's NPCA meeting, the convention bureau will assign rooms at either the Brown Palace, the Shirley-Savoy, or the Cosmopolitan where most of the sessions will be held. It is suggested you make room reservations directly with the hotel of your choice as soon as possible to be sure of accommodations.

Sponsored Non-Members Welcome At Denver Meeting

PCOs who are not members of the NPCA may attend the Denver meeting if they are sponsored by an association member. You should contact a firm that belongs to the NPCA and request a written invitation. This and the regular $20.00 registration fee will admit you to all sessions except those held for NPCA business only.

Registration fee includes the annual banquet and dance, buffalo barbeque, and Monday night get-to-gether party with refreshments and entertainment. A Monday luncheon will be extra.

Exhibit Booths Available

Suppliers wishing to display their line during the NPCA convention should contact Mr. William A. Anger, 1629 Jackson, Denver 6, Colorado, for rates, size of booths, etc.

DYNA-FOG* JR.

TRADE-MARK

ENDS

INSECT PROBLEMS for

Mosquito Control Districts • Dairies • Ranches • Industrial Plants • Bakeries • Schools • Warehouses Golf Courses • Mills • 31 Different Known Applications!

- Weighs just 15 lbs.
- "Out-fogs" anything in its class—extremely dense insecticidal fog output at rates up to 15 gals. per hour.
- Fog particle size selection from 0.5 to 75 microns.
- Only 1 moving part. No lubrication required.
- Easy starting.
- Economical and simple to operate.
- Widely sold—thoroughly tested and proved.

Cost: **$259.50** f. o. b. Bedford. Ind.

WRITE FOR MORE DETAILS

Note: For "Heavy Duty" Insecticidal Fogging Jobs — Ask About Our 100-Lb. Dyna-Fog. Does same Jobs as 650 lb. and Heavier Machines.

Curtis AUTOMOTIVE DEVICES, INC.
Dyna Products Division

P. O. Box 232-A
Bedford, Indiana

FOR RATS

QUICK **SURE**

ONE SHOT KILLS

GLOBE BRAND

THALLIUM SULPHATE

—•—

1 - 4 lbs.	$13.00/lb.
5 - 9 lbs.	$11.50/lb.
10 - 24 lbs.	$10.50/lb.
25 lbs. or more	$ 8.00/lb.

—•—

All prices F.O.B. Denver with transportation charges allowed to U.S.A. destinations.

Prices subject to change without notice.

NOW AVAILABLE — FREE FOLDER DESCRIBING EFFECTIVE BAIT FORMULATIONS. WRITE DEPT. LM.

AMERICAN SMELTING AND REFINING CO.

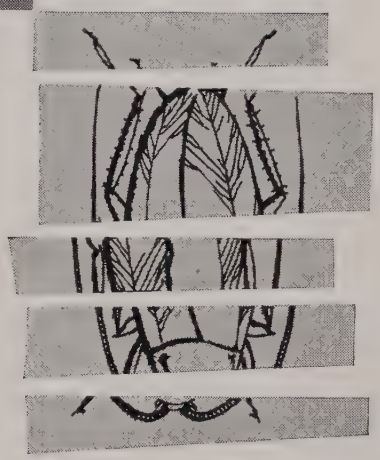
120 Broadway **New York 5, New York**

Think first of

DIAMOND LINDANE

for

PEST CONTROL



DIAMOND LINDANE (100%) is highly effective for industrial and household pest control. It is practically odorless, kills three ways—by vapor, contact, and stomach action. It works quickly and continues to kill because of its good residual action.

And when you use DIAMOND LINDANE, as with all DIAMOND products, you are sure of uniform high quality at reasonable price. For information on any DIAMOND product for pest control call your nearby DIAMOND Sales Office or write DIAMOND ALKALI COMPANY, 300 Union Commerce Bldg., Cleveland, O.

Diamond Chemicals for PCO

LINDANE—100% gamma isomer of BHC. Emulsions, Wettable Powders

DDT—100% Technical

DDT—Wettable Powders, Dust Concentrates and Emulsions

BHC—40% Technical, 12% Wettable Powders, Emulsion Concentrates

DIAMOND CHEMICALS®

Diamond Chemicals

Environmental Sanitation in the Control Of Pests of Public Health Importance

by

WILLIAM C. GIBSON

Associate Professor of Public Health Engineering
School of Public Health, University of Michigan, Ann Arbor

The essentials of environmental sanitation involve prevention of insects and rodents gaining access to food and shelter. In general, this encompasses three important aspects: (1) construction, (2) storage, (3) cleaning.

● 1. Construction

Ideally speaking, your client's home, hotel, factory, warehouse, restaurant, etc., should be constucted in such a way that insects and rodents cannot find shelter or harborage in walls, ceilings, floors and equipment. This standard, in its fullest sense, is exorbitant to meet from an economical point of view. However, satisfactory compliance is attainable rather reasonably by eliminating the most important defects in the majority of old and new buildings.

Effective pest control is difficult or impossible to attain when insects and rodents find shelter and harborage in places which are inaccessible for cleaning and killing purposes. Openings in walls, ceilings and floors which permit entry to inaccessible spaces are locations for first priority consideration.

Mechanical equipment, particularly that used in various food processing and handling establishments, should be capable of being completely and easily dismantled for cleaning purposes. Too frequently, such equipment offers both food and shelter for pests because it is so constructed that it cannot be dismantled for routine cleaning operations.

Another construction practice, which must be a headache for pest control operators, is the one of "boxing-in" equipment so that pest harborages cannot be reached. Management must be made to realize this practice seriously hinders effective cleaning and control.

These are a few of the more important aspects of construction which relate to preventive pest control and environmental sanitation. The second essential, storage, is closely related and is of equal importance.

● 2. Storage

Key consideration here is to deny food and shelter to insects and rodents. The essentials involve the protection of bulk and packaged foods in ways that make access difficult to pests. Specific procedures will vary somewhat with the kinds of food and pests. The factors of construction discussed previously are of primary importance in order to minimize shelter and harborage points in inaccessible places around food storage areas.

Generally speaking, foods should be kept in original containers until opened for use. Once opened, such containers may require special precautions to deny access to pests.

Foods in storage should be elevated above the floor to prevent harborages, to detect leaking containers and to permit cleaning operations. Overcrowding must be minimized.

Priority importance should be given the frequent removal of spilled foods from floors, shelves and storage racks. Such accumulations provide an easy food supply. Damaged containers, which permit leakage of food or access to pests, should be removed and the food protected in tight containers.

Another factor of primary importance is the storage of garbage, waste foods and food containers prior to collection for disposal. Such waste products must be stored in tight containers and removed frequently. Accumulations of empty packages, even when free from food deposits, provide harborages and hence should be removed frequently. Garbage and waste storage areas, both inside and outside, are ideal areas for the harborage, breeding and feeding of pests. The importance of these sites to preventive pest control must be brought to the attention of management.

These are a few of the more important aspects of food storage which relate to environmental sanitation. The third essential, cleaning, is closely related to constuction and storage and is also of primary importance.

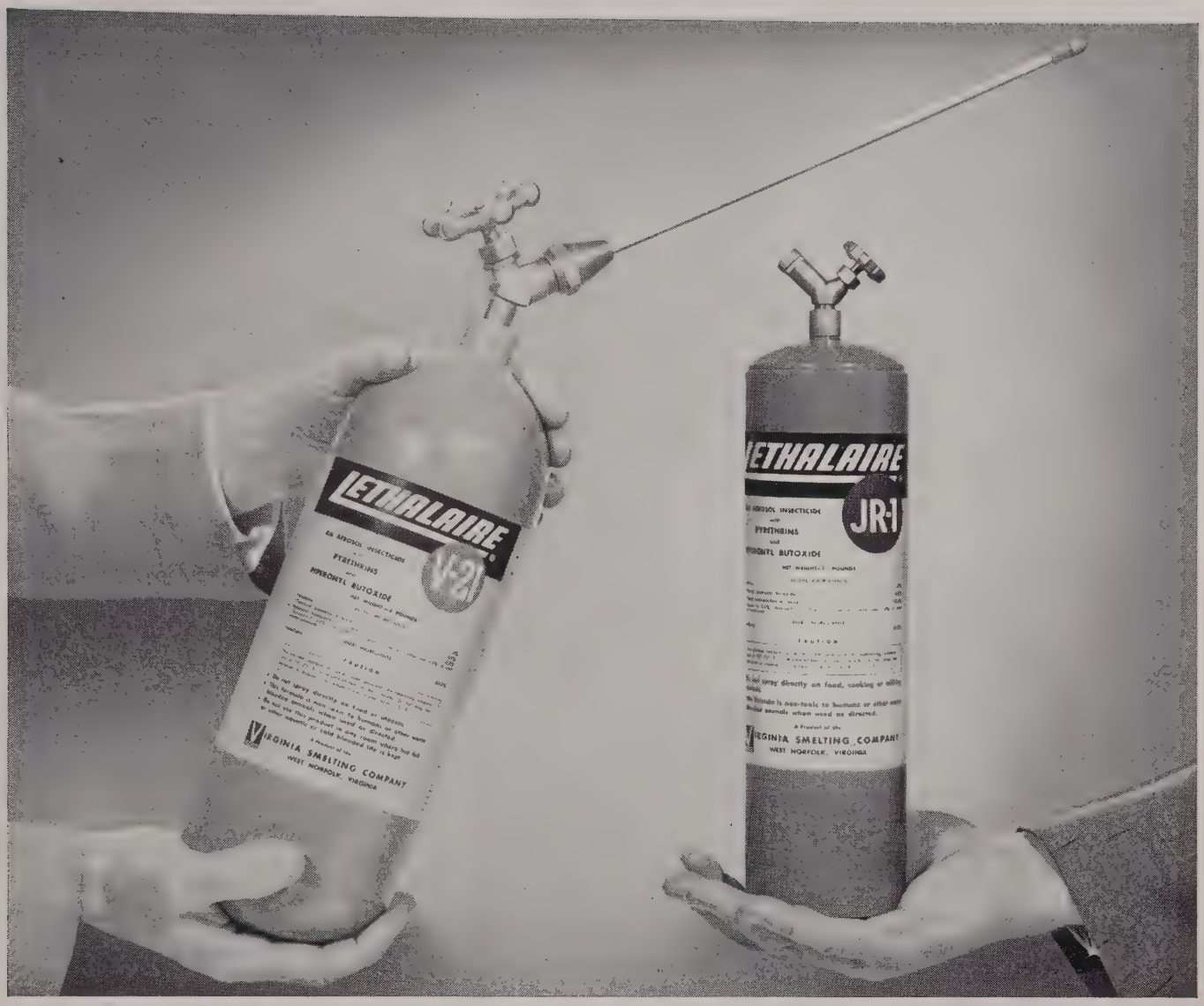
● 3. Cleaning

Key consideration here is to eliminate yet another food source. Accumulation of dirt, grease, food particles and waste organic matter is a natural by-product of man's activities. Such wastes are common to the places in which he lives, works and plays. The amount and character of such wastes varies with the occupation or activity but the production of wastes is inevitable.

These wastes accumulate on floors, shelves, walls and in and around equipment. They frequently provide media suitable for the development of insect larvae and for the attraction and feeding of adult pests. Management is usually alert to this problem in the sites that are open to the customer's view but is frequently negligent about the spots hidden from the customer. Good housecleaning operations must be extended to all areas and particularly to those places which are hidden from view and are hard to get at, such as under and behind stoves, refrigerators, equipment, counters, storage racks, ventilation fans and ducts, boxed-in recesses, dumbwaiter pits, basements, back yards, alleys, garbage and waste collection sites, etc.

These, then, are a few highlights on the importance of routine cleaning operations to preventive pest control.

(To be concluded in September)



NEW LETHALAIRE JR. THROW-AWAY PACKAGE WIDENS PEST CONTROL MARKET

Practically everyone who has need for an insecticide recognizes the advantages of the big 5-pound Lethalaire® bomb. One trouble is, however, that many people who need it couldn't economically take advantage of the large size. Now, with the introduction of the Lethalaire Jr. throw-away package, everyone can benefit from Lethalaire economy, efficiency and control.

Like the bigger bomb, Lethalaire Jr. is perfectly safe wherever food is processed or served—when used as directed. It is also highly effective and very economical.

One Lethalaire Jr. package will operate continuously for 26½ minutes and treat 532,000 cubic feet of space. When a cylinder is empty, remove the applicator valve, transfer the valve to a filled container, and discard the empty.

The specially designed applicator valve is the secret behind the quality of the Lethalaire Jr. package. Unlike ordinary valves, which merely squirt out aerosol in varying quantities, this valve correctly meters the flow at a rate of 1½ ounces per minute and controls particle size for maximum killing effectiveness.

A number of formulas will eventually be packaged in the Lethalaire Jr. container, and two are available right now. One contains pyrethrins sulfoxide; the other, pyrethrins-piperonyl butoxide. Both these formulas will kill resistant flies, wasps, gnats, flying moths and mosquitoes.

Lethalaire has always been a remarkable market-opener, getting pest control operators in such places as supermarkets, hotels, dairies, etc., that they were unable to approach before. Now your market is doubled with Lethalaire Jr.—because you can sell small as well as large users. For complete details of the attractive Lethalaire proposition, write LETHALAIRE DIVISION, VIRGINIA SMELTING CO., Dept. PC, West Norfolk, Va.

VIRGINIA Chemicals

Available in Canada and many other countries

Eliminate Insect, Rodent, Bird Trouble Before It Starts With This Sanitation

Survey of Farm Granaries

Grain stored in farm granaries is always in serious danger of being contaminated by insects, rodents and birds, but, an intensive, thorough PCO sanitation survey of the granary and outside area before the grain is stored will turn up most of the "hot spots" and so save customers grief and dollars later on.

The U.S Department of Agriculture's Commodity Stabilization Service has come up with these suggestions to pinpoint potential trouble while making the sanitation survey. Why not use them as a guide in making up your own inspection form?

Rodent Control

1. Are premises surrounding granary free from rodent harboring places such as piles of junk, wood, straw, trash, fence rows, weeds, etc?

2. Are buildings and ground free from rodents as indicated by a lack of pellets, burrows, gnawed holes and odor?

3. Is building free from rodent harboring places such as double walls, false floors and trash?

4. Is foundation and floor rodent proof?

5 Does door have a spring lock to help keep it closed?

6. Are openings in foundations screened?

7. Is the vent on top of the steel granary screened?

8. Do doors of steel granaries fit properly?

9. Are wood doors tight fitting and protected at the bottom with at least eight inches of metal strip?

10. If rodents are prevalent, are you poisoning and trapping?

Bird and Poultry Control

1. Is building free from openings through which birds and poultry or their droppings can get to grain?

2. Are windows, cupolas and louvers screened?

3. Is space under eaves closed to prevent birds from entering?

4. Are door openings used to put grain in building properly fitted to remain in place and easily closed?

5. If sparrows and pigeons are prevalent, are you doing anything to eliminate them?

Insect Control

1. Are walls swept down and floor cleaned before putting grain in bins?

2. Are walls and floors sprayed with a good insecticide before putting grain in bins?

3. Is granary kept clean and free from waste grain, commercial feeds, old grain sacks, etc., in which insects may breed?

4. Do you check grain that is carried over for insect damage?

Moisture Control

1. Is roof weatherproof?

2. Are side walls weatherproof?

3. Is floor dry and moistureproof?

4. Will doors, windows, cupolas and louvers keep out driving rain and snow?

5. Are bins ventilated?

6. Is moisture content of stored grain low enough to prevent spoilage?

7. Do you make monthly checks of building and stored grain?

Other Safeguards

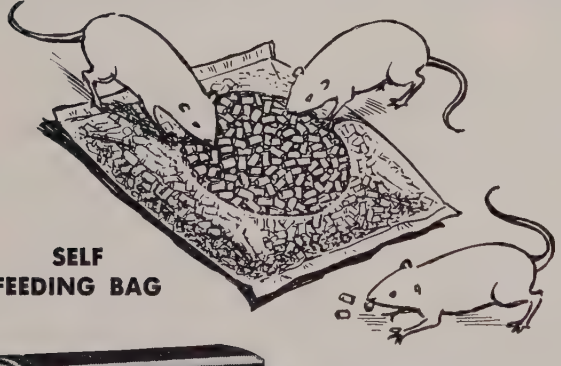
1. Are gas, oil, fertilizer, weed sprays, insecticides, fungicides, etc., or their containers that would contaminate grain kept out of the granary?

2. Are truck or wagon boxes on farm cleaned thoroughly before hauling grain to bin or elevator?

3. Do you point out not to haul oil barrels on top of grain?

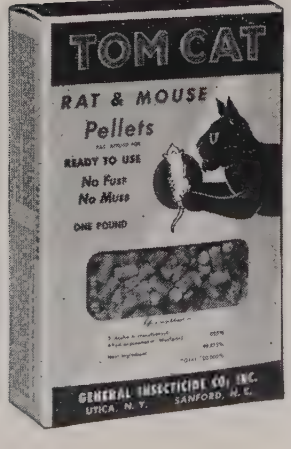
4. Do you tell customers not to market seed grain that has previously been treated?

TOM CAT – *the* RAT and MOUSE KILLER – in easy to use Pellet form



SELF FEEDING BAG

- **Convenient Pellet Bags**
- **Eye catching 3 color boxes**
- **Display Rack to help you sell**



The powdered rat killers are becoming a thing of the past. Pellets are taking their place. NO FUSS — NO MUSS. Once tried always used. There is no substitute for TOM CAT Rat and Mouse Pellets. Try them and see. You be the Judge . . . A few open territories available for salesmen.

FOR

DEALERS • JOBBERS • DISTRIBUTORS

Write for information and prices

GENERAL INSECTICIDE CO., INC.

UTICA, NEW YORK

You Can MAKE MORE MONEY

by using and selling

FUMO-KILL

The New, Safe Fumigant that will kill

Spiders, Moths, Mosquitoes, Silverfish, Wasps, Waterbugs, Bedbugs, Roaches, Etc.

FUMO-KILL is truly the modern method of insect extermination. Light match to contents in can will produce fumes—NO FLAME. Non-hazardous. This amazing **FUMO-KILL** insecticide has been tested, and is registered with the U. S. Department of Agriculture.

FUMO-KILL has the following advantages:

EASY TO USE: Fine Vapors destroy pests and their nests. **ECONOMICAL TO USE:** Two-ounces Fumigates up to 6,000 cubic feet.

EFFECTIVE TO USE — Vapors Penetrate Entire Room—Every Crack and Crevice

Special Offer!

Order 1 dozen 4 ounce cans at $13.50 per dozen, and get one 4 ounce can FREE

FUMO-KILL can be obtained in 2 oz. (enough for up to 6,000 cubic feet)—4 oz. and 1-lb cans.
Cost of 12—2-oz. Cans . . . $7.50 per doz.
Cost of 12—4-oz. Cans . . $13.50 per doz.
Bulk . . . . . $4.50 per lb.

Delivery Charges Prepaid
For complete information write or phone today.

MAR-MEL PRODUCTS, INC.

Phone: Van Buren 6-2060-61

753 South Kedzie Ave. Chicago 12, Illinois

Be Ahead 4 Ways With UNI-VAP Insecticide Vaporizer

UNI-VAP IS DESIGNED AND GUARANTEED TO PROVIDE:

- ★ **Effective Insect Control** by vaporization of lindane.
- ★ **Trouble-free operation** with Westinghouse adjustable UNI-THERM Thermostat.
- ★ **Long Life** with Chromalox Heating Element.
- ★ **A LIBERAL PROFIT FOR YOU.**

Each unit is covered by $100,000 product insurance. Join the leaders. Switch to Universal, the most reliable in the vaporizer field.

UNIVERSAL LINDANE in 1 oz. heat sealed, leakproof packets, and in 1 lb. cans.

Write for new lower prices and literature.

Universal ELECTRIC PRODUCTS CORP

P.O. Box 3216 4200 So Mendota St.
Madison 4, Wisconsin

The Sprayer That Every P.C.O. *MUST HAVE!*

New Improved IDICO STAR PISTOL TYPE SPRAYER

It is light . . . compact . . . with the easy hand grip and control — no dripping

PISTOL HAND GRIP . . . Trigger Operates High Pressure Hydraulic Piston . . . With Ease . . . No Heavy Pumping. Equipped with 1 quart brass bottom container. Large opening for easy and convenient filling.

INTERCHANGEABLE NOZZLES

1. **Fine fog**
2. **Penetrating Pin Stream That Reaches 20 Feet or More.**

AVAILABLE IN FOLLOWING MODELS

1. Straight Extension	B1	$10.25
2. Swivel Directional Extension	B3	10.50
3. Both Straight and Swivel Extensions	B4	10.75

● Can Be Used With All Type Liquids — Oils, Water, Emulsions, Deodorants, Moth Proofing Solutions, Etc.

On Orders of 6 or more units — 10% discount

COPPER CONTAINERS are available with all models at $1.00 more each

WARRANTED TO GIVE LONG Uninterrupted Service and Use So Rush Your Order In TODAY!

IDICO PRODUCTS CO.

1 West 125th St., New York 27, N. Y.

PIGEON and STARLING CONTROL

NOW **- - - a major business in the exterminating trade.**

GET **- - - your share - - - - -**

Sell and Apply
GROSLEY'S

"NO ROOST"

U. S. Copyright

POSITIVE: It is a physical impossibility for birds to roost in the area where formula is applied.

ECONOMICAL: It eliminates needless expense in building maintenance, in keeping ledges, roofs, sills, etc., free from bird mess. One gallon is enough to bird-proof 150 running feet.

LAWFUL: It complies with ALL city, state and humane laws. It cannot injure birds.

SAFE: It is **non-poisonous,** cannot harm anyone applying it.

CAN BE APPLIED TO ANY BUILDING, or electric sign. **Protects for a FULL YEAR** under most climatic conditions.

Available from Warehouse Federal Supply Service
Stock No. 51-R-684
Send today for full particulars to:

Aegis Laboratories, Inc.

BIRD CONTROL ENGINEERS

7900 Stony Island Ave., Chicago 49, Illinois

A Section of PEST CONTROL magazine

TERMITES and other enemies of wood

Protect Homes, Trees And Utility Poles from

Black Carpenter Ant Injury

by
DR. J. O. ROWELL
Extension Entomologist, Agricultural Experiment Station
Virginia Polytechnic Institute, Blacksburg, Va.

Carpenter ants are wood-nesting insects that occasionally cause SOS calls to operators because they invade dwellings, utility poles, posts and tree cavaties. Since, in most sections of the country, their damage to buildings is usually restricted to isolated parts of the structure, their injury is less important than that caused by termites.

Because the black carpenter ant **(Camponotus herculeanus pennsylvanicu** Degeer) is apparently the most destructive and the one most often confronted by PCOs, we'll discuss this species only. It is a native species found from Canada to the Gulf of Mexico and from the Atlantic Ocean west to the Dakotas and Texas.

Black carpenter ants are long-legged, swift moving insects, and one of our largest ants. Workers are polymorphic, ranging in length from 6-10 mm. Queens are sometimes from 13-15 mm. long.

Black carpenter ant colonies are ordinarily initiated by one lone queen. She lays but a few eggs at first which hatch into the small workers. These workers begin immediately to forage to feed the queen, and later brood, and extend the nesting area. From here on the queen's sole purpose in life is reproduction. It has been established that the sexual forms (true males and females) are not produced until the colony is at least 3-6 years old. These sexual forms produced one season remain in the nest over the winter and emerge for mating flights the following May.

Large colonies might contain as many as 5,000 ants, however, they are usually much smaller, sometimes consisting of only a few individuals.

● Nest in Soft Wood

Carpenter ants seek soft wood, particularly timber that has been weathered and begun to decay, to make cavities in which to rear their young. They may be found in porch columns and roofs, window sills, foundation plates and logs of cabins. These ants do not eat wood, but simply eject it in fibrous shreds to construct their chambers.

They feed on honeydew obtained from aphids and scales, and on animal remains and plant juices. They are also fond of foodstuffs such as jellies.

● Chambers Are Clean, Cut Across Grain

Carpenter ant damage is readily distinguished from that of termites. Their chambers are clean and are cut across the grain of wood. Piles of shredded fibers are often found outside infested wood. On the other hand, wood damaged by termites is characterized by stained, grayish chambers running with the grain. Termites also eat the wood as they remove it to extend their galleries.

Carpenter ants are of economic importance as household pests for two reasons: first, because of their foodstuff feeding habit, and second, because they frequently damage structural wood. Occasionally colonies will even nest in trunks, drawers, or other such places in the home.

Carpenter ants are controlled by applying poisonous dusts, sprays, or fumigants, to their nests or the places they frequent or crawl on in search of food.

● Dusts for Inside Control

For control inside buildings, dust with 5% chlordane, 2½% aldrin, 4% rotenone (derris powder), 10% DDT or with sodium flouride. Use about a tablespoon per crevice. Chemicals are most effective if applied during warm, dry weather. Where colonies occur in decaying wood in porches and columns, soak wood with a 5% solution of pentachlorophenol.

To remove ants from tree cavi-

Complete black carpenter ant colony, including queens and eggs, swarmed into this small bathroom closet. Colony was originally located in ceiling of back porch. What made them relocate is still a mystery writes E. H. Purcell of Ft. Wayne, Ind. who sent in the picture.

Based on a talk presented at the Purdue PCO Conference, February, 1955.

PENTA
CHLORDANE
DIELDRIN
LINDANE
MALATHION
BENZENE HEXACHLORIDE

ARAMITE
SODIUM ARSENITE
PYRETHRINS
DDT
FLY SPRAYS
WEED & BRUSH KILLERS

Whatever You Need... You Can Get It Here!

Everything In Chemicals For The PCO!

SALES AIDS TO HELP YOU

TERMITE INSTRUCTION MANUAL

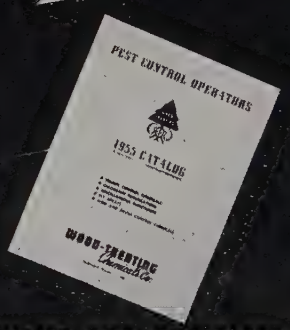
Filled with helpful information on termite treating procedures. Get one for your service men. FREE to customers.

MAILING PIECES

Powerful sales-building folder. Imprinted with your name and address at nominal charge.

NEWSPAPER MATS

Inquiry-getting, sales-producing ads that build business for you. NO CHARGE! Write for proof sheet.



WRITE FOR COMPLETE PRICE CATALOG

WOOD-TREATING CHEMICALS CO.

5137 Southwest Avenue • St. Louis 10, Missouri

WAREHOUSES: Atlanta • Birmingham • Charlotte • Dallas • Jackson, Miss. • Los Angeles Oakland, Calif. • Portland, Ore. • Roanoke, Va. • St. Louis • Spokane • Tampa

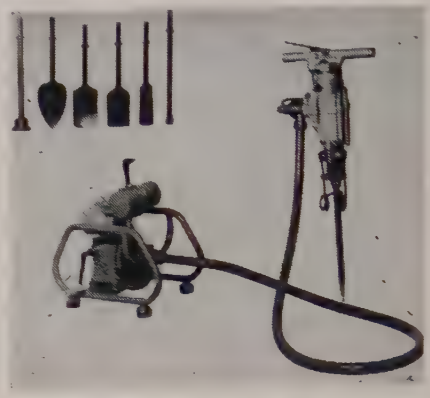
WOOD TREATING

If you have any pest control problems, Wood-Treating will be glad to give you the benefit of their years of experience without obligation. Write!

ties or stumps near shrubbery, stir 8 teaspoonfuls of 50% chlordane or 25% aldrin wettable powder in 1 gallon of water and soak the infested wood. Or you can do the same with 48% emulsions made from these chemicals. Dusts recommended for inside control can also be employed.

Ants can be eliminated from poles and posts by introducing any one of the following materials into their cavities: a mixture of equal parts coal-tar creosote and gasoline; a 5% solution of pentachlorophenol; a mixture of either orthodichlorobenzene or trichlorobenzene and kerosene (1 to 4 parts by volume); one of the sprays made from chlordane or aldrin; or fumigate with carbon tetrachloride after sealing all openings except the one being used.

Don't overlook sanitation as an important weapon in control. Remove and destroy logs and stumps that harbor colonies, seal crevices present in foundation walls to prevent their entry, and repair leaks in porch roofs and other places.



"Pinazza" rock breaking equipment has been widely used in foreign countries since 1944.

Pitnam Drills, Hammers

"Pinazza" rock drills and concrete breaking hammers are now being distributed in the U.S. by Pitnam Industrial Products Co., 608 Fifth Ave., New York City. Although new in this country, these products have reportedly been widely used in Europe, Africa and South America.

According to the manufacturer, because the power unit and hammer are separate, the hammer can be operated in any position. "Pinazza" rock drills and hammers, which are driven by either a portable gasoline engine or electric motor, are said to be capable of handling the same work load as pneumatic hammers of equal weight.

Other product advantages claimed by the company are design simplicity, no installation cost, light weight and portability, operating efficiency, air-cleared drill holes, and interchangeability of rods, bits, and special tools with standard American types.

Ark. Lists PC Violations

Unlicensed termite and pest control operators are still active in Arkansas in defiance of a state law requiring licensing, reports a recent issue of the Arkansas State Plant Board News, official organ of that department.

The Plant Board is receiving frequent complaints from property owners who have been taken-in by "fly-by-night" firms.

There is a standing reward of $25 to be given to any prosecuting attorney or arresting officer for the arrest and conviction of any violator of the Plant Board's regulations.

Now Electronics Aids You!

THE MICROSONIC DETECTOR Will Help You Find Hidden Termite Infestations Faster, Accurately and Without Property Disturbance!

The MICROSONIC DETECTOR is a sensitive, portable listening instrument that greatly amplifies termite sounds. A frequency selector reduces background sounds.

MICROSONIC DETECTOR complete, ready for use, with instructions, batteries, carrying case and recording of termite sounds . . . either tape or 78 rpm record, price $215.00 FOB Los Angeles, Calif. Shipping weight 7 lbs.

CRAIG ELECTRONICS

3455 Meier Street, Los Angeles 66, Calif.

CHAPMAN

AUGUST IS THE TIME FOR . .

PIVALYN with sugar for liquid baits. 100 lb. or 50 lb. drums.

PIVAL CONCENTRATE for solid baits. 100 lb. or 25 lb. drums and 5 lb. canisters.

PIVALYN CONCENTRATE 1.4 GRAM PACKETS without sugar for liquid baits. Units of 100 packets each.

LINDANE 20% EMULSIFIABLE for general pest control. Also use for oil dilution. 5 gal. can or four 1-gal. bottles.

Chapman ...CHEMICALS FOR PROGRESSIVE PCO'S

In the science of pest control, Chapman Chemicals stand out. Chapman technicians are constantly working to keep chemicals bearing the Chapman label the best available . . . chemicals the professional pest control operator can depend on to obtain the consistent results which build and maintain a good name for his business.

If you do not have your copy of Chapman's "BUYER'S GUIDE AND HANDBOOK" of technical information, and Chapman's "PCO PROMOTION PLAN" to get new business, write today to Chapman Chemical Company, Dermon Building, Memphis, Tennessee.

NPCA and VA Establish Suggested Specs For VA Pest Control Service Contracts

Pest Control industry members and the Veterans' Administration have collaborated to eliminate alleged unrealistic requirements of pest control contracts previously offered by certain VA installations. PCOs had reported that some terminology used was susceptible to such broad interpretation that is was impractical to make an accurate estimate of the work to be done.

As a result of these complaints, the staff of the National Pest Control Association met with members of the VA. Surveys of pest control problems then were conducted by both groups. Findings were coordinated and the following recommendations were submitted by the NPCA to its members and forwarded to VA installations by the VA Service Contracts Section.

1. Avoid a contractual requirement for "elimination" of a pest species. "Control" may reasonably be expected but "elimination" may be impractical.

2. Avoid the indefinite requirement of control of "all vermin." The pests or groups of pests for which control service is desired should be designated specifically and should include only those for which control can reasonably be expected to be purchased under an annual service contract.

3. Avoid the inclusion of termite control in service contracts. Such work, when required, should be solicited under separate bids.

4. Avoid the requirement of control for occasional invading species such as grasshoppers, clover mites, and boxelder bugs. We recommend that control of such species be provided under special arrangement when problems arise.

5. If fly control measures are to be provided, the contract should state specifically the extent to which treatments will be required. We recommend that broad requirements for "control" of flies be avoided as the measure of control which can be provided is dependent to such a great extent on sanitation practiced by the staff of the VA installation itself.

6. We recommend that the anticoagulant rodenticides (warfarin, pival, and their water-soluble forms) be recognized as acceptably safe for rodent control to the same degree as red squill and that their use be permitted without obtaining special permission from the officer in charge.

7. We recommend that "moths," "clothes moths" or "carpet beetles" should not be included in the list of species for which control is contracted generally for the whole installation. It has been pointed out that certain installations may wish to have regular treatments in specified areas for control of these pests. There should be no objection to the inclusion of such requirements for the control of these species or other species where the area and treatment are clearly specified.

8. Avoid the stipulation in the contract that "nothing in the formula will be injurious to human beings." A reasonable stipulation in this respect would be that no pesticide formulation be of such nature or be used in such way as to constitute a hazard to the health of the occupants of the premises.

The NPCA pointed out to its members that it is helpful to establish a proper understanding with a local VA staff member of just exactly the service which he wishes to purchase and will require. "Encourage him to be as specific as possible in incorporating his requirements in the contract. General guidance on the purchasing of pest control service is available to him from the VA Service Contracts Section," the NPCA advised in a recent membership Service Letter.

STOMPING
THEM TO DEATH—

—isn't the way an alert P.C.O. handles his fumigation jobs—and, compared to heated Methyl Bromide, the older methods of space fumigation are almost as inefficient as stomping pests to death! Heated Methyl Bromide requires no time to vaporize—the fumes go into action right away, penetrate faster and deeper! Effective lethal concentration is reached immediately, and maintained longer. There is no possibility of a 'half-kill,' with its necessity for time and profit-gobbling re-works!

The heating unit pictured at the left, Black J's Model "A" has been developed through the refinement of several prototype designs. Light, strong, compact, and easily-portable, —it weighs only 144 lbs., fully-loaded—this is the first Methyl Bromide heater which doesn't have to be assembled on the job. It can be carried to the job filled with fuel and water, lifted off your truck and, within minutes, be vaporizing the output of two tanks of Methyl Bromide simultaneously.

The "Pestmaster" Methyl Bromide shown with this heater is a product of Michigan Chemical Corporation, St. Louis, Michigan

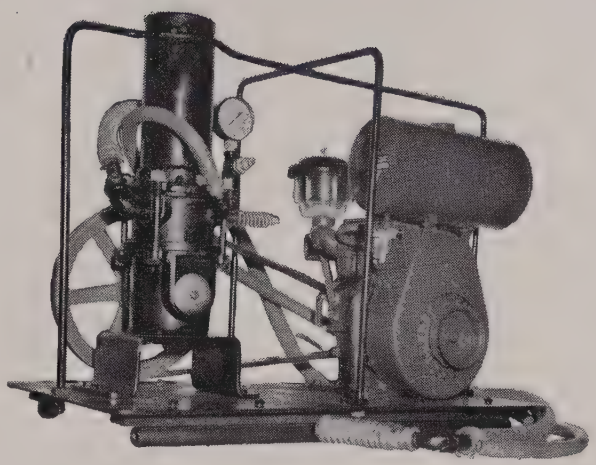
BLACK CHEMICAL PRODUCTS

FREE literature describing this Methyl Bromide heater, and how it can raise your profits, is available from: BLACK J. Chemical Products, 1643 12th Street, Santa Monica, Calif.

Another FIRST For PRESHUR-MITE

A NEW Portable Spraying & Termite Treating Unit With A Pump That Does Away With Your Pumpaches

NEW DIAPHRAGM PUMP Eliminates expensive break-downs, can be repaired on the job in less than ten minutes with extra kit which comes with each unit. Unit comes fully equipped with 100 Ft. 3/8" I. D. chemical hose & Accessories. Wt. Approx. 145 lbs.



Portable unit shown handles abrasive & corrosive chemicals used in termite, pest, weed & grass control applications without damage to pump's pumping parts. Capacity 6 gal. per minute, pressure adjustable to 175 P.S.I. Agitates 55 gal. steel drum of solution thoroughly.

Catalog No. 1B119

EWING MANUFACTURING COMPANY

MAKERS OF HIGH QUALITY PEST CONTROL EQUIPMENT SINCE 1936

P. O. BOX 1986 JACKSON, MISSISSIPPI, U. S. A.

Meet Competition

with

Vaccinol

TESTED — 25th YEAR

BONDED CHEMICAL

For Termite & Powder Post Beetle Control

BONDS AVAILABLE TO APPROVED LICENSEES

Try a Few Drums and Be Convinced

HURRY - HURRY!

Closing Exclusive Territories Fast.

Write Today for Full Details

VACCINOL CHEMICAL COMPANY

2487 Pennsylvania P. O. Box 3205 Telephone WH-8-1166

MEMPHIS 9, TENNESSEE

Distribution *makes* the Difference in...

RESIDUAL SPRAYING

SPRAYING SYSTEMS TeeJet SPRAY NOZZLES

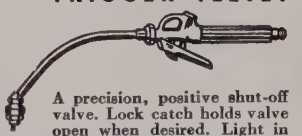
Distribution of liquid particles are very important in residual spraying. TeeJet Spray Nozzles give you uniform distribution over entire pattern area . . . and proper atomization. Available in any capacity, nozzle assembly includes interchangeable orifice tip and strainer. Write for Bulletin 58.

FOR EASIER SPRAYING ON THE JOB

ADJUSTABLE CONEJET

With ½ turn of tip you have full range choice of spray from finely atomized cone to solid stream. Fits any TeeJet body or Trigger TeeJet. Write for Bulletin No. 63.

TRIGGER TEEJET



A precision, positive shut-off valve. Lock catch holds valve open when desired. Light in weight, comfortable. Supplied with straight or curved extensions. Use with any TeeJet Tip. Write for Data Sheet 4675.

SPRAYING SYSTEMS CO.

Engineers and Manufacturers

3221 RANDOLPH STREET • BELLWOOD, ILLINOIS

What's NEWS In The Industry

Dieldrin Accepted For Termite Control

Use of dieldrin for the control of subterranean termites has been accepted by the Pesticides Regulation Section of the U. S. Department of Agriculture, F. W. Hatch, manager, agricultural chemicals division, Shell Chemical Corporation, has announced.

Dieldrin provides two outstanding advantages, according to Hatch. First, its low volatility means it will stay put longer — give long residual control of the termites. Secondly, dieldrin will not break down in the presence of highly alkaline soil. Such soil is caused by the lime, plaster and other debris left from construction work. It is thus usually found in that critical zone where termite control is so important.

The new label recommends a 0.3% dieldrin solution applied at the rate of one gallon per five linear feet along foundation walls which are less than 15 inches from grade level to footings, and two gallons per five linear feet if the wall is deeper.

Dieldrin is formulated into emulsible concentrates by major insecticide companies.

Pesticide Handbook Ready

1955 edition of the **Pesticide Official Publication and Condensed Data on Pesticide Chemicals** is off the press and now ready for distribution. The 191 page booklet, which is published by the Association of American Pesticide Officials, Inc., covers 175 chemicals. Of especial interest is the inclusion of official residue tolerances covering those materials for which they have been established.

Publication price is $3 per copy. Send orders to association secretary, A. B. Heagy, Box HH, University Post Office, College Park, Md.

Suppliers' Staff Changes

William P. Drake became president of the Pennsylvania Salt Manufacturing Co. on July 1st. He succeeded **George B. Beitzel.** Company headquarters is in Philadelphia.

William B. Francis has joined Diamond Black Leaf Co. as a sales representative. He will be headquartered in Dallas, Texas.

Dorr D. Green (left), Chief of the U. S. Fish and Wildlife Service's Branch of Predator and Rodent Control is presented the Department of Interior's Distinguish Service Award by Douglass McKay. Mr. Green was honored with the Interior Department's highest award "in recognition of his outstanding leadership and organization of important phases of wildlife management throughout the United States and Alaska." He has been with Fish & Wildlife Service since 1920.

Fumarin Approved by USDA

Anticoagulant rodenticide, Fumarin, has been approved by the U. S. Department of Agriculture for use against rats and mice in the United States.

Fumarin has reportedly been widely used for several years in the sugar plantations of Cuba and the rat infested ports of the Near East. It has also been employed in Europe and Australia.

The new rodenticide will be offered as a 0.5% formulation under the trade name Ratafin-22. For use it is mixed with 19 parts of a bait material such as corn meal or rolled oats.

American Chemical and Paint Co., Ambler, Pa., is the American distributor of Fumarin. It is expected the material will be on the market in the near future.

Court Dismisses Fellton Suit

The Georgia Court of Appeals has upheld the action of the Fulton County Superior Court judge in dismissing a $1,266,905.00 law suit against the Orkin Exterminating Co., Inc. of Atlanta.

The suit, the largest of its kind ever filed in Fulton County, was brought against the company by Herman L. Fellton, a former vice-president of Orkin. Fellton contended that officials of the firm had forced him out of the company and sought to prohibit him from going into competition against them and to discredit him in the pest control industry.

In sustaining the lower court, Judge H. E. Nichols, for a unanimous Court of Appeals said,

"The petition does not show that the plaintiff was injured by the conspiracy, for to prohibit the plaintiff from entering business as a competitor the defendant corporation would have had to comply with the terms of the employment contract, and not breach it as it is alleged to have done. Accordingly, there is no merit in the contention that the trial court erred in sustaining the general demurrer to count one of the petition."

York Joins Orkin Sales Staff

Fred York, former Atlanta, Ga., PCO, has joined the National Sales Division of Orkin Exterminating Co. He will be in charge of the company's floor level sanitation program and will make his headquarters in Atlanta.

Pest Control scale display was one of the exhibits at California State Polytechnic College during recent campus open house. Exhibit shows various sites where insects and rodents are problem. The college, which is located at San Dimas, offers a 4-year pest control course.

FOR FLIES!

Spectacular, New

DIPTEREX-199

A PRODUCT OF PITTSBURGH COKE & CHEMICAL CO.

ONE POUND KILLS 2 MILLION FLIES

No Odor Easy to Use Won't Stain

A Natural Attractant

Can Be Scattered Use As A Residual Spray

Just **sprinkle lightly** on floors, window sills, walks or areas of heavy infestation. Can be applied as a spray by using 4 oz. of concentrate per gallon of water. Or apply as a paint or varnish if you prefer.

Use DIPTEREX-199 around barns, poultry houses, rendering plants, drive-in restaurants, ice cream stands, picnic areas, packing houses, garbage disposal areas.

THE FLY SEASON IS HERE . . . ORDER NOW

12 one lb. shaker containers per case
$11.60 per case

4 ten lb. bulk containers per case
$30.00 per case

Freight allowed on 10-1 lb. or 3-10 lb. cases

Do you have our catalog?

PEST CONTROL EQUIPMENT CO.

24 N. Bond St. MO 8-1197 Mt. Vernon, N. Y.

Use Both to Kill Rodents!

NAPESCO'S

EAT-KIL

(Pival in a highly acceptable grain base)

New* Ready to Use Tastier Rat and Mouse Bait

*Bait based upon research studies at Purdue University and especially developed for the pest control industry.

½ lb. pkg.	$ .50 (48 per carton)	25 lb. pkg.	$ .40 lb.
1 lb. pkg.	.90 (24 per carton)	50 lb. pkg.	.38 lb.
3 lb. pkg.	2.00 (8 per carton)	100 lb. pkg.	.36 lb.

Freight paid on orders over 150 pounds.

Write for quantity prices

BAIT STATIONS

No. 1 Large Round Rat Station 14" diameter, 5½" deep **$1.60 each**

No. 2 Small Round Mouse Station 7" diameter, 3" deep **82c each**

No. 3 Rectangular Mouse Station 6" x 11" x 3" deep **$1.00 each**

All Metal Equipped with Swivelling Self-Feeder

NAPESCO, INC.

East of the Mississippi Order from
Ernest Andersen
NAPESCO, INC.
Route 1, Dresser Road
Lafayette, Indiana

West of the Mississippi Order from
Harlan R. Shuyler
NAPESCO, INC.
3138 State Avenue
Kansas City 2, Kansas

Do YOU *have* INSURANCE PROBLEMS?

40 Years of Specialized Experience in pest control and allied lines assures you of

the correct answer

from

B. & D. A.

WEISBURGER

PHONE: LOngacre 5-4356

1440 Broadway New York 18, N. Y.

Rodenticide (including 1080) and Insecticide coverage and all other types of policies in all American Stock companies for Public Liability, Auto Liability, Property Damage, Workmen's Compensation, Products Liability, Accident and Health, Life Insurance, and all forms Employee Insurance Plans.

WRITE TODAY FOR INFORMATION

Barnett Brand

THALLIUM SULPHATE

(Packed 2 and 1/5 lbs. net in cans)

Also

Methyl Bromide
Paradichlorobenzene
Creosote Oil
Disinfectants
Insecticides
Liquid Soaps

•

BARNETT CHEMICAL PRODUCTS CO.

326 Lafayette Bldg. Philadelphia 6, Pa.

Phone:
LOmbard 3-9552 or LOmbard 3-9553

Notebook

TIPS AND IDEAS FROM THE FIELD

Sweet Music For Starlings

By Harold Burnside

Starling flocks were costing a large structural steel processing firm in excess of $50 a day for cleaning and maintenance, when the firm called in a PCO last May. Though the operator was not too happy about getting into bird control, he decided to tackle the problem.

What he found when he investigated the company's SOS call almost made him wish he hadn't said "yes."

Site of the trouble was three huge sheds where structural steel is painted. Buildings were 85 ft. wide, 120 ft. long, and 60 ft. high with an abundance of girders about 10 ft. from the ceiling. But the worst feature was that one end was completely open with two steel electric crane runways extending 100 feet outside each building. Runways were approximately 30 ft. high.

Exclusion was impossible both from a mechanical and economical standpoint. So was poisoning because the starling flocks flew from 25 to 50 miles away from the buildings every day in search of food, returning only to bed down at night.

The PCO's servicemen first put out paradichlorobenzene crystals, but with only one result. Nothing happened. Then they tried applying grease-like bird repellent to the girders. Results were also negative because the beams were painted and the material would not stay in place. In fact, one serviceman said, "It was just like trying to spread butter on sand."

Now if you were in this PCO's shoes what would you have done?

Don't forget that mechanical exclusion was impossible. And we're not talking about a few starlings but about thousands. In fact before the birds moved into the buildings at night, stacks of metal outside and surrounding trees and wires were black with them. And the birds were costing the company several hundred dollars a week for maintenance and cleaning alone. It had become so bad railway crews were threatening to refuse to load the steel because of extensive bird droppings.

Now that you have the facts you'll probably come up with the same solution that this PCO did. Just in case you want to compare notes turn to page 54, where there's a complete explanation on how these invaders were banished.

CSMA Revises Aerosol Digest

A newly-revised digest of federal and municipal regulations covering sale and shipment of pressurized aerosol products has been prepared by the Chemical Specialties Manufacturers' Assn., as a guide to manufacturers and marketers in complying with safe practice rules.

The publication deals primarily with Interstate Commerce Commission regulations for labeling, product definitions, and shipping container specifications. Price of the digest, punched for insertion in standard 5-ring, 6 x 9" binders, is $6 including postage in the U. S. and Canada. Address orders to the association at 50 East 41st St., New York 17, N. Y.

knock-out the odor in Insecticides and other strong-smelling Chemical Specialties with CHLORSCENT

CHLORSCENT was especially developed to quickly, efficiently and economically cover and neutralize the unpleasant odors so often present in insecticides and other chemical specialties used in pest control operations. Why not test CHLORSCENT in your own products. We'll be glad to send a free sample on request, or ship you a pound at the low, low price of $1.60.

reodorize 1 gallon of insecticide for only 2 1/2 cents

AROMATIC PRODUCTS
INCORPORATED
15 East 30th Street, New York 16
Chicago, Dallas, Memphis, Pittsburgh, Los Angeles, Boston

MICE - GLUE

GETS MICE LIKE FLYPAPER GETS FLIES

7½ lbs. $1.00 per lb. 25 lbs. $.90 per lb.
100 lbs. $.80 per lb.

BIRD - REPELLENT

Keep Pigeons, Starlings and Other Birds from Buildings

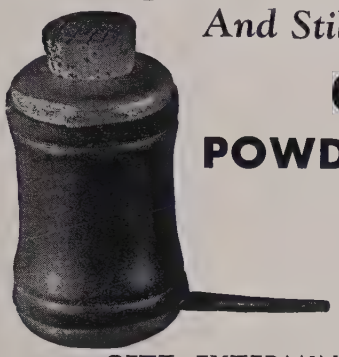
7½ lbs., $1.00 per lb. 25 lbs., $.90 per lb.
100 lbs., $.80 per lb.

PEST CONTROL CHEMICAL CO.

324 Broadway Write for details Buffalo, N. Y.

The Original . . .

And Still The Best!



GETZ POWDER BLOWER

75¢ EACH
F.O.B.
St. Louis, Mo.

GETZ EXTERMINATORS, INC.
2234 OLIVE STREET ST. LOUIS 3, MO.

Consultant

on the Control of Termites, Wood-Boring Insects and Wood Preservation

(1) Advice on Job $50.00 per day and expenses. ¼ day minimum.
(2) Agent to Consult Government Departments, Daily rate.
(3) Advice by Letter or Telephone $10.00 each, unless much Research Required, then Daily rate.

Dr. Thomas E. Snyder

2801 Adams Mill Road, N.W. Washington 9, D.C.
Telephone: DUpont 7-3757

Buying A Business?

Expanding The Company?

Seeking New Employees?

Looking For A Job?

There's plenty of pulling power in a
CLASSIFIED ADVERTISEMENT
published in Pest Control magazine

NEW! Internal Pressure Seal Designed
1 GALLON UNIT offered for the first time
Exclusive with PCE

A 1-gallon job that is frankly the best value we have ever offered in a sprayer.

And, if you already own a PCE tank-type sprayer, you'll be glad to know that spare parts are interchangeable with other stainless steel tank-type sprayers in the PCE line.

AS ILLUSTRATED **$26.50**

WITHOUT GAUGE **$24.50**

as shown plus coupler at valve end of hose **$30.00**

PEST CONTROL EQUIPMENT COMPANY

24 N. Bond Street MO-8-1197 MT. VERNON. N. Y.

MR. PCO...THIS IS IT

THE TIME OF THE YEAR WHEN

★ Everyone is Moth and Carpet Beetle Conscious;
★ Valuable Rugs and Carpets are being protected from Moth and Carpet Beetle damage;
★ Large Profits are being made by aggressive **PCO's** who are mothproofing and giving **PER-MO's** **5-YEAR** Written Guarantee.

PER-MO MOTHPROOFING INCREASES YOUR PROFITS!

Most PER-MO dealers easily show **500% PROFIT** on Mothproof Service Work . . . In addition, we help you sell Mothproofing by giving you **FREE** envelope stuffers and other dealer aids.

We give your customers a **WRITTEN GUARANTEE** that their rugs and carpets won't be damaged by moth or carpet beetle larvae for at least **5 YEARS** . . . In case of damage, **PER-MO** assumes **100% OF LIABILITY**. . .

Water-base type of liquid, **EASY-TO-USE,** harmless, **WILL NOT SPOT OR STAIN** . . . Odorless, and causes **NO INCONVENIENCE** while Mothproofing in a home . .

— Some Other PER-MO Products —
● Flameproof Liquid ● Arsenic Rat and Mice Liquid ●
● Red Squill Rat Bits and Rat Paste ● Antu Rat Paste ●
● "Chek" Deodorant ●

PER-MO STANDS THE TEST IT'S BY FAR THE BEST

WRITE TODAY FOR FULL DETAILS
On any or all products!

OUR 20th YEAR

PER-MO PRODUCTS CO.
Dept. P. 58, 1715 E. 36 St., Kansas City, Mo.

$ Termites In Charlotte

Repairs and control measures to combat the termite in Charlotte, North Carolina cost home owners $2,000,000 in 1954. So says a writer for the "Charlotte Observer". North Carolina entomologist Thomas M. Gunn, of Charlotte, is quoted as the source for this estimate.

Answer to Notebook on page 52

Though he had never personally used sound as a means of frightening off starlings, the operator thought it might be worth a try. He called W. D. Fitzwater, Fish and Wildlife Assistant District Agent at Purdue to get the details.

Luckily it turned out Fitzwater had recently made a tape recording of the starling distress chirp and had to come to the operator's town the next week to address the city's rodent control officials. Fitzwater brought his tape and tape recorder along with him.

At dusk on a Monday evening, Fitzwater and the PCO stationed themselves and their equipment, which consisted of the recorder and loud speaker, just inside one of the warehouses.

As soon as the first starling flock was sighted, Fitzwater started up the recorder. Birds that were heading for the "battle headquarters" veered off sharply and settled in trees, on wires, and on metal piles some distance from the sound.

Seeing the marauders were hesitant to enter the building in which the recorder was located, Fitzwater and the operator transfered the equipment into another of the plagued buildings. Results were the same—the birds stayed out. Same was true for the third building.

Then they started the rounds again. By this time it was dark and the birds had settled down for the night. While they were moving from warehouse to warehouse some birds had re-entered the "empty" buildings. Efforts to dislodge these "re-entries" were only about 50% successful, proving the theory that once these birds have become established for the night, it's pretty tough to chase them out.

However, a company official who was accompanying the service duet said that 90% of the birds had been chased away.

The second night Fitzwater and the PCO again stationed themselves inside the warehouses, but this time they had two loud-speakers, one between two of the buildings which were next to each other, and the other in a building some distance away. Only about 100 starlings showed up and these scattered quickly when the recording was started.

On Wednesday only three starlings were counted.

Thursday none of the birds showed up.

As birdman Fitzwater said, "we expected it to work, but we never expected anything like this. The results were amazing."

A month later, the structural steel firm reported no more starlings have "deposited" on their stock, and they haven't played the tape since the third night.

How long can this "sweet music" last?

—Primer—

LOOK ALIKES: 8

Prepared by DR. MARION E. SMITH and HSIU-FU CHAO
Entomology Department, University of Massachusetts, Amherst

Drugstore Beetle and Cigarette Beetle

Drugstore beetles and tobacco or cigarette beetles are taken up in this eighth in a series of illustrated columns which describe physical differences between insects which look alike. Last month the authors described correct identification techniques to tell granary and rice weevils apart. Don't throw these columns away. They may be useful for serviceman study courses and for inclusion in company operating manuals.

DRUGSTORE BEETLE

Sitodrepa panicea

TOBACCO or CIGARETTE BEETLE

Lasioderma serricorne

Head is bent at right angles to body so that it is not usually seen when insect is viewed from above.

Size and color

Similar — brown in color — about 1/10 of an inch long (2-3 mm.)

Wings

Very fine but distinct **lengthwise lines;** wing covers about twice as long as wide.

No lines, but with rows of fine hairs; wing covers broader, less than twice as long as wide.

Antennae

Last three segments enlarged and triangular.

All segments about equal, triangular.

Food

Stored foods; cereal and plant products, flour, meal, breakfast foods, dried peas and beans, dried plants, drugs, spices, red pepper; leather, books, dry insects; bread.

Cereal and plant products; cigars, cigarettes, stored tobacco; rice, seeds, dried drugs, spices, dried fish; flax, hemp, tow and other vegetable fillings of furniture; bookbindings; cotton seed meal.

Senco

SENCO PIVAL CONCENTRATE
An anticoagulant rodenticide. Mix one pound of Senco Pival Concentrate with 19 pounds of corn meal to prepare baits for rats and mice.
5 lbs. $8.75 25 lbs. $41.25
100 lbs. $155.00
Freight prepaid on 50 pounds or more.
2% discount if check is sent with order.

SENCO PHOSPHORUS PASTE
A specific application for the larger species of roaches — American and Oriental roaches.

25 lbs. ..... 11.00 100 lbs. 35.00
10 lbs. .....$ 6.00 50 lbs. $19.00
Shipped freight prepaid in the U. S. A.
2% discount if check is sent with order.

SS 56% TC CHLORDANE CONCENTRATE
Special Senco 56% Termite Control Chlordane Concentrate
One gallon makes 32 gallons of a 2% Chlordane emulsion. A 2% emulsion made with this concentrate costs you about 15c a gallon.

5 Gal. Pails at $5.10 per gal. .....$ 25.50
30 Gal. Drums at $4.95 per gal. 148.50
55 Gal. Drums at $4.85 per gal. 266.75
Freight Prepaid on 15 Gallons or More.
2% Discount if check is sent with order.
Write for our complete price list.

SENNEWALD DRUG CO., Inc.
2721 Chouteau Ave. St. Louis 3, Mo.

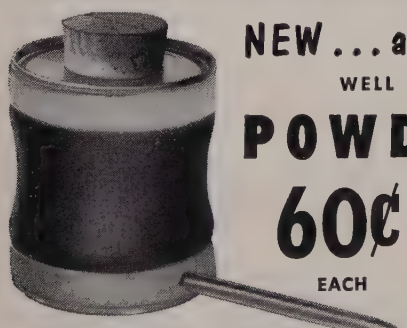
BIRD DAMAGE IS COSTLY

ECONOMICAL **POSITIVE**

Make this service a part of your regular contract. Bur-Co Bird Repellent does not harm birds. Write for prices.

SAFE **HUMANE**

BURR CHEMICAL CO. 3329 Auburn-Rockford, Ill.



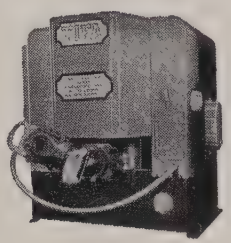
NEW...and IMPROVED
WELL CONSTRUCTED
POWDER GUN
60¢ EACH
F.O.B. Atlanta, Ga.
Plus Parcel Post and Sales Tax Where Applicable

For further information write:
Purchasing Department
ORKIN EXTERMINATING CO., INC.
713 West Peachtree St., N.E.
Atlanta, Georgia

ORKIN Since 1901 ®
WORLD'S LARGEST PEST CONTROL COMPANY

TIFA
is still the best!

For continuous satisfactory results depend on TIFA — first in the field and successfully used for more than 10 years in pest control.

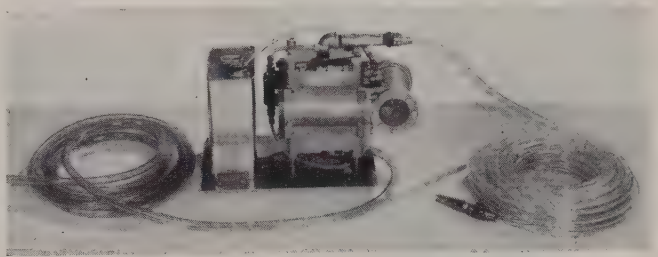


"TIFA"
Todd Insecticidal Fog Applicator carrying Underwriters' Listing Seal.

Send us your questions. Ask for folders

Products Division
TODD SHIPYARDS CORPORATION
Headquarters: Columbia & Halleck Streets, Brooklyn 31, N.Y.
Plant: Green's Bayou, Houston 15, Texas

New! IDEAL SPRAYER for TERMITE SOIL TREATING



The HYDROMOTOR Is A Complete Answer for Heavy or Light Spraying

For treating soil for termites or treating outside areas for Ants, Spiders, Sowbugs, Centipedes and other insect pests, the new Hydromotor Spray Unit gets the insecticide deep into the ground where it **lasts** . . . assures positive kill at lowest cost. Water pressure operated, it requires no other power supply — makes even small spray jobs profitable.

CHECK THESE IMPORTANT FEATURES:

Portable—weighs only 38 lbs.
Dimensions: 12½" High
18½" Long
9" Wide
Any emulsifiable insecticide may be used.

Costs nothing to operate — requires only water pressure.

Designed to last for years of every-day use.

Just a Few of Many Satisfied Users:
Delk Pest Control, Fresno, Calif.
Lloyd Pest Control, San Diego, Calif.
Columbia Pest Control—Los Angeles & Salt Lake City
San Diego Exterminating Co. San Diego
Pest Control Services, Inc. Indianapolis

ORDER TODAY!

Prove to yourself that the new Hydromotor Spray Unit will do the job faster, more effectively and economically. $329.50, F.O.B. Los Angeles.

Pest Control Products Co.
6201 Santa Monica Blvd.
LOS ANGELES 38, CALIF.

Infestation Report

Contains pertinent portions of the Department of Agriculture's **Cooperative Economic Insect Report**, material from university entomology departments, and reports from readers. PCOs noticing infestations in their own areas are urged to communicate with **Pest Control** so their information may be added to this infestation report.

AMERICAN DOG TICK
(Dermacentor variabilis)

North Dakota: Continues numerous in eastern area.

BLACK CARPENTER ANT
(Camponotus herculeanus pennsylvanicus)

Wisconsin: Building up and becoming more troublesome in many areas of state. Unusually annoying to home owners throughout southern part of state.

BOXELDER BUG
(Leptocoris trivittatus)

New Mexico: Numerous in San Miquel County and becoming a nuisance in homes and streets.

CLOVER MITE
(Bryobia praetiosa)

Idaho: Abundant around homes in Moscow. Considerable damage to grass and clover in lawns and severely damaging many flowers and shrubs.

CRICKETS

Kansas: Black field cricket appearing in many towns and problem in homes in central area.

Feeds BOTH dry and liquid bait, at the same time!

Constructed of durable *galvanized steel.* Rust and weather proof. Proved effective, the choice of PCO's. Two sizes available for immediate delivery.

No. 1
26 guage, single compartment, 9" x 9" x 5½" high.

No. 2
24 guage, double compartment, (illustrated) 17" x 10" x 8" high.

Write for NEW LOW PRICES

Universal ELECTRIC PRODUCTS CORP
P.O. Box 3216 4200 So Mendota St.
Madison 4, Wisconsin

DERMESTIDS

Montana: Showing up generally in houses.

DOG FLEA
(Ctenocephalides canis)

Michigan: Common at Lansing, Mason and Okemos.

FALSE STABLE FLY
(Muscina stabulans)

Idaho: Two puparia and one full-grown larva obtained from a hospital patient in Lewiston. Specimens apparently passed in feces. This is reportedly a common species in intestinal myiasis.

FLEAS

South Carolina: Tremendous number of complaints in sandy areas.

HOUSE FLIES

Pennsylvania: Control necessary in northeast area. **New Jersey:** Increasing in dairy barns and around homes. **North Carolina:** Fewer than for several previous years in the Piedmont area. **South Carolina:** Abundant at Clemson. **Utah:** Becoming a problem in many areas. **Texas:** Heavy widespread infestation reported in San Augustine County.

JAPANESE BEETLE
(Popillia japonica)

Virginia: Light to severe damage in Henry County; damage to flowers, shrubs, trees and small fruit. **Maryland:** Damage to roses in St. Mary's County. One adult found in weeds in Talbot County. **Rhode Island:** Adult taken on rose on college campus.

LITTLE HOUSE FLY
(Fannia canicularis)

Michigan: Large populations on the Michigan State campus.

MOSQUITOES

Colorado: Larval counts in drainage ditches at Ft. Collins 40-50 per cup; increasing. **North Dakota:** Populations increasing following rains. **South Carolina:** Problem at Fort Jackson. **Mississippi:** Outbreak in one section of Forrest County. **Louisiana:** Infestation very severe in rice and sugarcane belt. **Oklahoma:** Extensive populations found in many sections of central area. **California:** Larval density increasing in some agricultural regions in coastal area. **Minnesota:** St. Paul to undertake city wide mosquito control project. **Alaska:** Infestation on livestock worst in past five years in Matanuska Valley. **Kentucky:** Salt marsh mosquito has appeared in Henderson, Hopkins and Webster Counties, where strip-mining and oil-drilling are underway. **Texas:** Heavy widespread infestation in San Augustine County.

OLD HOUSE BORER
(Hylotrupes bajulus)

Maryland: Damaging timbers at police barracks, Waterloo, Howard County; adults found. **Virginia:** Damaging sill of a new home in Staunton. **Pennsylvania:** A few adults emerging from beams in a house in Lackawanna County. **Florida:** Adults in home in St. Petersburg. **Connecticut:** Larvae found in flooring at Danbury.

PIGEONS

New Jersey: Infestation throughout city of Hoboken.

RATS

Missouri: St. Louis plans more intensive city-wide rat control project. **Rhode Island:** Infestation in section of North Providence. **Illinois:** Still troublesome to home owners in La-Grange Park.

TERMITES

Oklahoma: Have seriously damaged and in some cases have girdled oaks in Payne County. **Idaho:** Reports from widely scattered areas on damage from subterranean termites. Either infestations are increasing or home owners are becoming conscious of them.

WHARF BORER
(Nacerda melanura)

New York: Heavy infestation in underpinning of dwelling in the Bronx. Adults active. **Pennsylvania:** Numbers in basement of house in Allegheny County. **Maryland:** Adults found in boat with damaged wood, Baltimore County.

Calendar

Ohio Pesticide Institute Meeting, Wooster, Ohio, Aug. 9-11.

Ohio Pest Control Operators Assn. Meeting, York Country Club, Columbus, Aug. 12-13.

Virginia State Pest Control Assn. Meeting, Virginia Beach, Aug. 19-20.

New Jersey Pest Control Assn. Monthly Meeting, Log Cabin, Rutgers University, New Brunswick, Aug. 22.

National Assn. of Sanitarians 19th Annual Educational Conference, Sheraton Plaza Hotel, Boston, Mass., Aug. 22-26.

Assn. of Master Pest Control Operators of Dayton Monthly Meeting, Dayton, Ohio, Aug. 24.

Texas Pest Control Assn. Fall Quarterly Meeting, Stephen F. Austin Hotel, Austin, Aug. 27.

Arkansas PCO Licensing Examinations, State Plant Board, Little Rock, Sept. 6.

National Agricultural Chemicals Assn. Annual Meeting, Spring Lake, N. J., Sept. 7-9.

Eastern Pennsylvania Pest Control Assn., Inc., Monthly Meeting, Sylvania Hotel, Philadelphia, Sept. 8.

American Institute of Baking Special Course in Bakery Sanitation, Chicago, Ill., Sept. 19-22.

Iowa Pest Control Assn., Inc., Meeting, Blackhawk Hotel, Davenport, Sept. 22-23.

Baking Industry Exposition, Convention Hall, Atlantic City, N. J., Oct. 1-6.

National Pest Control Assn. Convention, Cosmopolitan Hotel, Denver, Colo., Oct. 16-20.

American Public Health Assn. 83rd Annual Meeting, Municipal Auditorium, Kansas City, Mo., Nov. 14-18.

Entomological Society of America Annual Meeting, Netherlands Plaza Hotel, Cincinnati, Ohio, Nov. 28-Dec. 1.

Chemical Specialties Manufacturers Assn. 42nd Annual Meeting, Roosevelt Hotel, New York City, Dec. 5-7.

Weed Society of America Meeting, Hotel New Yorker, New York City, Jan. 4-6.

North Carolina Pesticide School, Raleigh, Jan. 10-11.

The Biggest

"SHOW" of the Year

will appear on the advertising pages of

PEST CONTROL's

October NPCA Convention Issue

to be distributed at the
National Pest Control Association Annual Convention, Denver, Colorado, October 16-20

Everybody, but every pest control delegate will stop to look at the chemicals, equipment and supplies displayed on the advertising pages of this big SHOW issue. Everyone attending the meeting will be given a free copy of **PEST CONTROL'S** October **CONVENTION ISSUE** and copies will be mailed to other pest control firms whether subscribers or not.

This is the *One, Best Way* to be sure your sales story is **seen, read, saved** and **taken home!** There will be no advertising in the convention program.

Solid Reader Interest. Never before have we printed an issue loaded with so many live-wire photographs readers will save and save and save. New pest control problems in modern-day home construction, a comprehensive study of carpenter ants, signs of infestation—are but three of the terrific feature articles headlining the profusely-illustrated October convention issue of PEST CONTROL. **Advertisements will be seen over and over again because of the long life value of this outstanding number.**

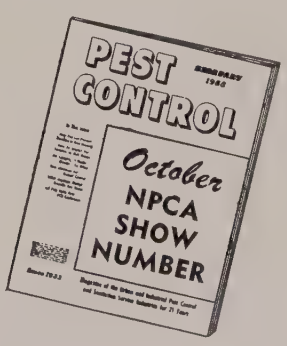
Over 5,000

will see your advertisement

Products advertised in our October issue will have the **largest audience** ever provided PEST CONTROL advertisers—25% over our 4,000 guaranteed paid circulation—and at no extra cost!

Reserve Space Now!

FINAL CLOSING DATE: SEPT. 20



See you in the BIGGEST SHOW ISSUE of the Year:
PEST CONTROL for OCTOBER

PEST CONTROL

1900 Euclid Ave. **Cleveland 15, Ohio**

Nine panelists representing industry asd government at July 8th Washington grain education conference are (left to right): **Clyde Noyes,** USDA; **George Larrick,** FDA; **Lloyd Case,** USDA; **C. M. Ferguson,** USDA; **Herman Fakler,** Miller's Federation; **W. C. Dachtler,** USDA; **Dorr Green,** F&WLS; **Wayne Colberg,** USDA; and **J. T. McCarthy,** baking industry. Missing from the picture were **Roy Hendricksen,** Grain Cooperators; and **J. D. Parel,** American Railroads Assn.

Industry, Government Hold Joint Meet In D. C. July 8 to Study Clean Grain Education Program

A conference aimed at improving and explaining the government's clean grain education program was held in the Department of Agriculture, Washington, July 8. Over 95 officials of the Departments of Agriculture, Health Education and Welfare, and Interior, as well as industry men representing producers, country elevator operators, railroads, millers, bakers, and trade papers participated in the meeting.

Under the chairmanship of C. M. Ferguson, Administrator of the USDA's Federal Extension Service, the meeting was designed to better acquaint producer, handler, and processor groups with the clean grain education programs now being carried out by State Extension Services and the USDA, and to study ways of increasing the effectiveness of these programs.

● 2 Reasons for Education Program

Administrator Ferguson led off by explaining that two recent developments have made an intensive clean grain educational program necessary: (1) In January of this year, the Food and Drug Administration again started clamping down on grain producers, storers and shippers who do not meet certain minimum standards. These provide that wheat which, on sample test shows more than two rodent pellets per pint or kernels visibly damaged by insects in excess of two per cent or more by weight, cannot be used for food. (2) In line with this enforcement program, the Commodity Credit Corporation of the USDA has revised the regulations governing the wheat price-support program. Under the new provisions crop wheat must meet FDA minimum sanitation requirements to be eligible for price-support loans. This means that wheat producers must assume responsibility for keeping grain clean in order to benefit from price support programs.

First progress report of the grain education program came from Federal Extension Service's Clyde Noyes, who is state leader of programs and reports for Nebraska. Mr. Noyes said that all important wheat states now have some agency actively working on grain sanitation education. In addition to use of the various media of communication, Mr. Noyes said practical on-the-scene demonstrations of grain sanitation and working with youth groups are the two most potent educational tools.

● North Dakota Grain Project

Another USDA field man, Wayne Colberg, entomologist working in North Dakota, said his state has been working on the clean grain educational program since 1951. A state committee formed for this purpose consists of such groups as the Farm Bureau, Farmer's Union, U. S. Fish and Wildlife Service District Agent, Livestock Association, and youth clubs like the Future Farmers of America and 4-H.

Through the use of newspapers, radio, television, and practical demonstrations the committee stirred up so much interest in the program that the Governor of North Dakota declared July 11-16 "Clean Grain Week."

However, Colberg said there were still three big "kinks" in the program: (1) lack of personnel, (2) not enough visual aid material and (3) inadequate finances.

Food and Drug Commissioner George Larrick told delegates his department will cooperate with elevators and food handlers in any way it can. He said District FDA chiefs are available for talks on clean grain before civic, business and trade groups.

Lloyd Case, of the USDA's Commodity Stabilization Service, called for universal participation in the program by all industries and individuals concerned. "Our biggest problem," he said, "is to overcome farmer prejudice against the program."

Dr. W. C. Dachtler, head of grains and feeds research of the USDA's Agricultural Marketing Service, said up until now grain sanitation has been concerned with prevention, detection and control. However, the program will have to be switched from one of controlling and checking infestations to preventing them, he advised.

Three phases of clean grain research which Dr. Dachtler said his department is now investigating are: (1) development of improved storage structures, (2) development of equipment to prevent heat damage, and (3) experimentation with electrical equipment to kill grain insects.

● Green Speaks for F&WLS

Dorr D. Green, Chief of the Fish and Wildlife Service's Branch of Predator and Rodent Control, reported that since January his agents have participated in the clean grain education program by taking part in meetings, inspecting government and private bin sites, doing research on the anticoagulant rodenticide Fumarin, and preparing TV and radio releases for use in North Dakota and other grain producing states.

"Requests for assistance from our agency have increased tremendously since January," Mr. Green said. "One of the big research projects now facing the F&WLS is to find out how rodent and bird filth actually gets into food. When we pinpoint the exact causes we're really on our way to control."

On hand to appear for country elevators was Roy Hendricksen, Secretary of the National Association of Grain Cooperators.

"Grain elevators are very much aware of the educational program and will cooperate," Mr. Hendricksen said. However, he cautioned the government that there are some obselete facilities where control is difficult.

● Warns of 'Bogeyman' Approach

One sharp note of warning was injected by Mr. Hendricksen. "Don't overuse the 'bogeyman'

approach to grain sanitation. Over dramatizing the situation may give wheat a bad name. Wheat now is one of the cleanest products on the market but the national consumption can be hurt by 'scare tactics'."

Voicing this same concern was baking industry representative, John T. McCarthy, president of the Jersey Bread Co. in Toledo, Ohio. "I, too, share a little distrust of too much scare material," he said. "It might get into the wrong hands and hurt the baking, cereal, and milling industries."

"Railroads are conscious of contamination, so conscious that several million dollars a year are being spent to clean freight cars alone," reported railway spokesman, J. Don Parel, of the Association of American Railroads. Mr. Parel said one contribution railroads are making to the sanitation program is the equipping of 19,000 boxcars with fibreglass linings to aid in cleanliness.

Millers were represented at the meeting by Herman Fakler, vice president of the Millers' National Federation. "Millers are not only willing but anxious to cooperate in the clean grain program," he said. "Our industry feels it has an obligation to put a clean and nutritious food before the American people. But millers cannot do it alone. It must be a combined effort between all grain handlers and the government."

● Summary of Suggestions

Summary of the suggestions and conclusions reached by industry and government spokesmen at the conference revealed the need for a seven point project to improve the grain education program: (1) more visual aid material, (2) a better unified program in states, (3) more material for instruction, (4) better coordination inside and outside the USDA, (5) additional research information, (6) a liason committee between the three government departments concerned, and (7) added personnel at the state level and reassignment of uncooperative or inefficient personnel.

As to the place of the pest control industry in grain sanitation the opinion among informed industry leaders was to take it slow. One prominent trade official pointed out after the meeting there is no way of knowing just how long the government will continue to enforce its clean grain code.

However, there was also a strong feeling that this time the program would really click, meaning new business for PCOs prepared to take on grain sanitation.

Don't Pass Up

the SEPTEMBER issue

covering such important topics as

- ✓ **History of Anticoagulants**
- ✓ **Mites As Household Pests**
- ✓ **Fumigation Question & Ans.**
- ✓ **Environmental Sanitation**

and

latest NPCA Convention news and developments

Kirkpatrick Heads NJPCA

F. S. Kirkpatrick, Western Exterminating Co., Newark, was installed as president of the New Jersey Pest Control Assn. at an installation dinner-dance held at the Chanticler Restaurant, Millburn recently. Other new association officers are: first vice president, John Medoff, Hudson Exterminating Co., West New York; second vice president, Walter Roberts, Model Exterminating Co., West Englewood; secretary, Joseph Geisman, Sanitary Exterminating Co., Jersey City; and treasurer, John D. Henderson, Harder Exterminating Service, Glen Rock.

Rodent Films & Publications

(from page 18)

Rat Eradication Measures on Ratproofing Projects. 77 frames, 20 minutes, No. CDC 5-068, 1947. Medical Director in Charge, Communicable Disease Center, P. O. Box 185, Chamblee, Ga., or any U. S. Public Health Service regional office. Loaned free. Shows steps in complete eradication of rats from a building and how to maintain a rat free structure.

Ratproofing of Existing Buildings. 78 frames, 20 minutes, No. CDC 5-087, 1947. Medical Director in Charge, Communicable Disease Center, P. O. Box 185, Chamblee, Ga., or any U. S. Public Health Service regional office. Loaned free. Demonstrates how to ratproof a typical building and importance of maintaining it.

Recognition of Rat Signs for DDT Dusting. 76 frames, 20 minutes, No. 5-038, 1945. Medical Director in Charge, Communicable Disease Center, P. O. Box 185, Chamblee, Ga., or any U. S. Public Health Service regional office. Loaned free. Illustrates methods used in detecting rat signs, rodent habits, and use of DDT.

1080, A Rat Poison for Professional Use. 72 frames, 20 minutes, CDC 5-124.0, 1950. Medical Director in Charge, Communicable Disease Center, P. O. Box 185, Chamblee, Ga., or any U. S. Public Health Service regional office. Loaned free.

Use of Warfarin in Rat Control. 54 frames, 15 minutes, color, No. CDC F-74. Medical Director in Charge, Communicable Disease Center, P.O. Box 185, Chamblee, Ga., or any U. S. Public Health Service regional office. Loaned free.

This Is the Enemy. 62 frames, 10 minutes, 1947. Wil-Kil Pest Control, 522 West North Avenue, Milwaukee 12, Wisc. Sells for $75.00. No rental or loan.

Win the War Against Rats and Mice With Warfarin. 46 frames, 15 minutes, 1951. Wisconsin Alumni Research Foundation, 506 N. Walnut Street, Madison, Wisc. Loaned free.

F&WLS Regional Offices

Here are addresses for the six U. S. Fish and Wildlife Service regional offices where the rodent films and publications so specified can be obtained:

Region **1.** Interior Building, 1001 N.E. Lloyd Blvd., Portland 14, Ore.
Region **2.** 220 W. Copper Ave., Albuquerque, N. M.
Region **3.** 1006 West Lake St., Minneapolis 8, Minn.
Region **4.** Peachtree-Seventh Bldg., Atlanta, Ga.
Region **5.** 1105 Blake Building, 59 Temple Place, Boston 11, Mass.
Region **6.** P. O. Box 2021, Juneau, Alaska.

U.S. Public Health Service Regional Offices

These nine regional U. S. Public Health Service offices will furnish the films and literature specifically designated as being available through this agency:

Region **1.** 120 Boylston St., Boston 16, Mass.
Region **2.** 42 Broadway, New York 4, N. Y.
Region **3.** Federal Security Bldg., Washington 25, D. C.
Region **4.** 50-7th St., N.E., Atlanta 5, Ga.
Region **5.** 69 W. Washington St., Chicago 2, Ill.
Region **6.** 911 Walnut St., Kansas City, Mo.
Region **7.** 901 Ross Ave., Dallas 2, Texas.
Region **8.** New Custom House, 19th and Stout St., Denver 2, Colorado.
Region **9.** 441 Federal Office Bldg., San Francisco 2, Calif.

Additional lists of publications and films on related subjects are available by writing the respective Divisions of Information, U.S. Department of Agriculture, U.S. Fish and Wildlife Service and U.S. Public Health Service, all at Washington 25, D. C.

Profitless Pests

(from page 22)

of-doors around the building. The usual formula for bran bait is:

100 lbs. wheat bran
7 to 8 gals. water
one of the following:
5 lbs. sodium arsenate
½ lb. chlordane
1 lb. toxaphene

The dry ingredients are mixed together and **the water added last.** Prepared baits are available.

• Occasional Invaders

Earwigs, and particularly European earwigs (where they occur) are responsible for damage to flowers and terror to the housewife. The bran mash bait should control these insects. It should be applied in the garden, since very few earwigs get into the house.

Springtails may come into a home in large numbers from the outside. DDT sprays should kill them.

Beetle invaders vary in numbers from an occasional ground beetle to a bushel of elm leaf beetles. Elm leaf beetles and lady beetles come into the dwelling to hibernate. Other beetles seem to enter the house for no apparent reason.

Small numbers of beetles require no special control measures. However, the elm leaf beetle, because of the enormous numbers involved, is a real nuisance. It is definitely a job for a pest control operator. Spraying to kill beetles with DDT in oil, removing dead beetles, and closing cracks and openings through which they come in is the control procedure.

• Insect Relatives

Millipedes live on decaying matter and are seldom a problem in homes. Destroying the decaying matter is the first step in eliminating them. Centipedes feed on insects, and are not likely to be abundant unless many insects are present. Controlling the insects should eliminate centipedes.

Dog ticks are of course associated with dogs. These ticks are likely to attack humans if the infestation is very extensive. Control of ticks on dogs is probably a job for the veterinarian. Residual sprays of 5% DDT have been suggested for control in houses. Spraying tick-infested grass and shrubbery with DDT or benzene hexachloride should reduce the danger of infestation.

The clover mite has been a very difficult pest to control. It breeds on grass, and may migrate to houses in the fall. In addition to crawling in, female mites may deposit eggs in the building. During the winter and spring, the hatching mites enter the building. This pest is worse on new lawns hence seems to be associated with new building developments.

Ideal control is to spray grass in the fall to reduce the infestation. Once the house is infested, frequent sprays with Pyrethrum or a miticide are required. Anyone of the good miticides (Aramite, Ovotran, Dimite, etc.) should work.

This "cookbook" information has been assembled to demonstrate that control measures are available for these pests. In many cases these control measures are of a type that can be "sold" to customers. In some cases professional service is necessary for best results. There should be some way to make a profit from control of such pests.

• Charge On Service Basis

Perhaps the most certain way to profit by these profitless pests is to operate on a professional rather than a service basis. Doctors, engineers, lawyers and accountants are paid for their information and advice. They do not offer "free" inspections or "free" service of any kind. They seldom "guarantee" results, whether one visit or a monthly service is given. There is a proverb that people respect what they have to pay for, and that free service is worth as much as it costs.

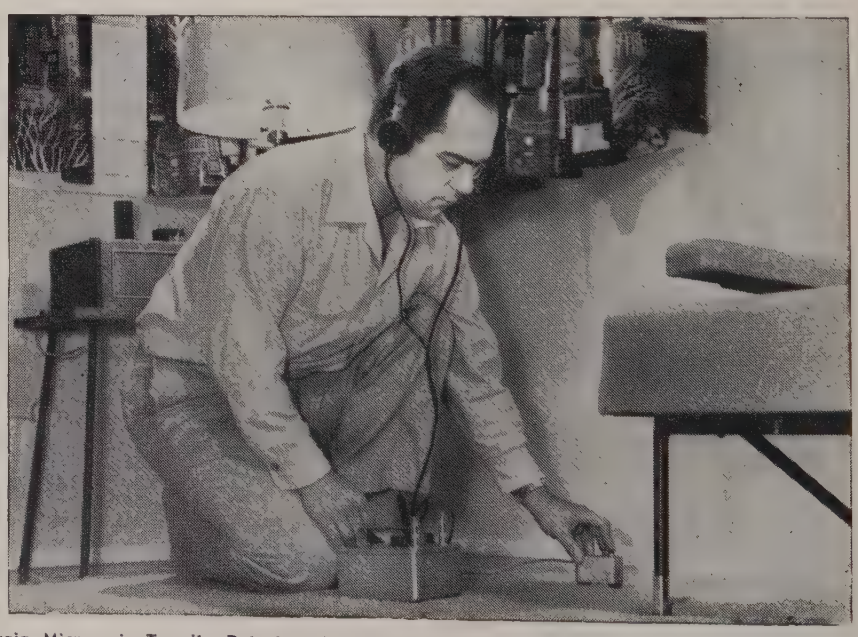
Finally, some profit might be made from these pests by selling the materials for control to home owners. Some garden centers have built up a very lucrative business identifying pests and selling pesticides. This could be one way of recovering something for "free" service.

Texas PCOs Hold 9th Annual Short Course

Ninth annual Texas Pest Control Operator Short Course was held at Texas A. & M. College, College Station, in June. The full-day conference was preceded by a meeting of the Texas Pest Control Association's Board of directors.

During the short course the 109 attending PCOs and suppliers' representatives heard talks on ants, silverfish, new insecticides, fleas, moths and carpet beetles, and rat control. Experts on hand to bring delegates latest control information included V. A. Little, F. M. Fuller, D. F. Martin, M. A. Price, C. F. Garner, and Milton Caroline.

Conference was sponsored by Texas A. & M.'s Department of Entomology and the Texas Pest Control Association. Short Course chairman was J. L. Howell, of Howell Termite Control Company, Houston.



Craig Microsonic Termite Detector electronically picks up sounds of termites gnawing to aid in properly pinpointing infestations. Unit consists of headset, battery operated amplifier, pick-up unit with on-off control and a vibration sensing needle, and a carrying case for handling ease.

Classifieds

When answering ads where box number only is given, please address as follows: Box number, c/o Pest Control, 1900 Euclid Avenue, Cleveland 15, Ohio.

Rates: "Position Wanted" 5c per word, minimum, $1.00. All other classifications, 10c per word, minimum $2.00 All classified ads must be received by Publisher at least three weeks preceding publication date and be accompanied by cash or money order covering full payment.

POSITIONS AVAILABLE

World's largest pest control firm, operating in 27 states, needs several high-caliber men for responsible positions. Unlimited opportunities for ambitious, aggressive young men. Liberal salary and incentive arrangements. Employee benefits include paid vacations, sick leave, life insurance, hospitalization and pension plan. Experience in professions related to pest control helpful though not essential. Training programs for future managers and other supervisory positions open to college graduates, also several openings for service personnel. Replies confidential. Contact Technical Department, Orkin Exterminating Company, Inc., 713 W. Peachtree St., N.E., Atlanta, Georgia.

POSITION AVAILABLE

Man experienced in pest control. Must have proven record in service and service sales. This rapidly growing corporation in mid-west has employee stock ownership, profit sharing, paid vacations, retirement, and sickness-accident insurance paid by the company. Guaranteed income plus personal commissions. Reply giving full details. The employees know of this ad. Box 377 Pest Control magazine.

POSITION AVAILABLE

Experienced serviceman with salesmanship and managerial capabilities for general pest control in Pennsylvania, Ohio, Kentucky and W. Va. Must have good background, be honest and responsible. All replies confidential. Write R. D. Erdie, Ace Exterminators, Inc., Watson Hotel Building, Fairmont, W. Va.

POSITION AVAILABLE

Young entomologist with practical experience in pest control and termite operations for substantial company in Latin America, in modern city with delightful climate. Prefer single man capable of developing into general manager in two or three years by learning Spanish. Owner reaching sixty years of age and wishes to retire. Compensation to start at least $4,000 or more per year over and above living expenses. Transportation paid for vacations in U. S. Owner will be in U. S. September or October for interviews. Unusual opportunity for right man. Write fully to Box 374 Pest Control magazine.

POSITION AVAILABLE

Man experienced in pest control sales supervision. Must have proven record in managing sales - servicemen and outstanding personal sales. This rapidly growing corporation in midwest has employee stock ownership, profit sharing, retirement and sickness-accident insurance paid by the company. Guaranteed income plus personal commissions and override. Paid vacations. Reply giving full details. The employees know of this ad and they demand a man who can produce in sales and increase profits. Box 378 Pest Control magazine.

POSITION AVAILABLE

Food Plant Inspector. Opening in our sanitation division. Must be U.S. Food and Drug trained and be qualified to handle sanitation problems in all types of food plants. Prefer married man. Location East Coast. Excellent opportunity to grow with prosperous company engaged in this line for several years. Metropolitan travel. Salary arrangement excellent. Reply Box 379 Pest Control magazine.

POSITIONS AVAILABLE

Openings for two experienced termite salesmen by one of Alabama's leading companies. We pay 30% commission to qualified men. Write W. Q. Whitehurst, Mgr., Birmingham Termite Control Co., 224 North 14th St., Birmingham, Ala.

POSITION WANTED

Graduate chemist, 20 years experience in pesticides, disinfectants, cleaners, soaps, waxes and other sanitary chemicals desires position with company interested in manufacturing. Box 380 Pest Control magazine.

POSITION WANTED

Man in his early thirties, thoroughly experienced in pest control. Presently sales manager for large eastern organization. Would like to associate with a growing, progressive firm in need of a manager or sales manager. Prefer to relocate in West or Southwest. Hard worker with know-how and ideas that get results. Salary requirements $10,000 or better per year. A complete resume on request. Box 381 Pest Control magazine.

WANTED

Will buy small pest control business in Pennsylvania, Ohio, Kentucky and W. Va. Write details to R. D. Erdie, Ace Exterminators, Inc., Watson Hotel Building, Fairmont, W. Va.

WANTED

Will buy small or large pest control business in New York City or Long Island, N. Y. Write details to C. J. Gentile, Hygiene Pest Control Co., 86-39 Lefferts Blvd., Richmond Hill, N. Y.

Advertisers

SUPPLIERS ADVERTISING IN AUGUST

Aegis Laboratories, Inc. 43
Agricutural Specialties 19
American Cyanamid Co. 7
American Smelting & Refining Co. 39
Aromatic Products, Inc. 52
B. & G. Co. 18, 23, 29
Barnett Chemical Products .. 51
Black J. Chemical Co. 48
Broadway Rubber Corp. ... 34
Burr Chemical Co. 55
California Spray-Chemical Co. 27
Chapman Chemical Co. 47
Wm. Cooper & Nephews, Inc. 62
Craig Electronics 46
Curtis Automotive Devices 39
Diamond Alkali Co. 39
Donco, Inc. 3
Dow Chemical Co. 32, 33
Ewing Manufacturing Co. .. 49
Fairfield Chemical Division 3rd cover
General Insecticide Co. 42
Getz Exterminators, Inc. 53
B. F. Goodrich Chem. Co. .. 4
Hopkins Agricultural Chem. 35
H. D. Hudson Mfg. Co. 35
Idico Products Co. 43
Mar-Mel Products, Inc. ... 43
Michigan Chemical Co. 15
Motomco, Inc. 13
Napesco, Inc. 51
Niagara Chemical Division . 31
Orb Industries 37
Orkin Exterminating Co. .. 55
S. B. Penick & Co. 25
Per-Mo Products Co. 53
Pest Control Chemical Co. .. 53
Pest Control Equipment Co. 14, 51, 53, 4th Cover
Pest Control Products Co. .. 55
John Powell & Co. .. 2nd cover
Prentiss Drug & Chem. Co. .. 8
Sennewald Drug Co. 55
Shell Chemical Co. 17
Spraying Systems Co. 49
Todd Shipyards Corp. 55
Universal Electric Products 43, 56
Universal Metal Products .. 6
Vaccinol Chemical Co. 49
Velsicol Corp. 11
Virginia Smelting Co. 41
B. & D. A. Weisburger 51
Wis. Alumni Research Fndn. 21
Wood Treating Chemicals .. 45

Bird Repellent Sales Helps

A reportedly harmless and colorless gelatin compound, "Roost-No-More," said to repel birds, and packaged in an aerosol can, comes complete with an attractive counter display, window streamres, newspaper ad mats, envelope stuffers, and direct mail postcards for sale by pest control operators.

For complete details write National Bird Control Laboratories, 5315 West Touhy Avenue, Skokie, Illinois.

Pestales

"Sounds like celery; no, like sawing wood." *The boys couldn't decide which better describes the termite chewing sounds they heard in a tape recording of a University of California broadcast played before last month's meeting of Cleveland PCOs. Recording demonstrated what you hear with the new Craig Electronic Termite detector. A very interesting 13-minute recording. Maybe your group could borrow it for an up-coming program.*

* * *

Bee Keeper: Neighbors of New Jerseyite, Andrew Cervencik, wouldn't be at all surprised if he started buzzing around honey combs any day now. Up until a few weeks ago Andrew didn't have one single claim to fame. Then fate in the form of a bee moved in — or rather flew in. Right into his mouth. Surprised Mr. Cervencik, who was driving his automobile at the time, promptly swallowed. Down went the bee, buzz and all. He didn't even get stung, but Andy doesn't think he got off so lucky. You see, he was so surprised when the winged invader entered his auto he lost control and crashed into a parked jalopy.

* * *

Expanding business. *It's always nice to see pest control suppliers grow. Latest word is that B & G Co. has moved into new and larger quarters outside of Philadelphia. New address is Plumsteadville, Penna.*

* * *

One Too Many: "I just wanted one last drink for the road," moaned a not so gay hospital bound Georgian, as he flashed a half-empty pint bottle to state police who stopped him for speeding. Instead of arresting the man, police turned on their sirens and rushed him to the nearest hospital. Seems in his eagerness to get one last drink the hapless playboy had swilled from a bottle labeled "Rat Poison."

* * *

Passing parade. *Louis G. Huge, president of The Huge Co. in St. Louis, Mo., died recently after an 8-month long heart illness. His son, Tom, succeeds his father. Woodrow M. Givens, of the Dayton, Ohio, Exterminating Co., passed away in April, we've just learned.*

* * *

Mistified: Ever give a skunk a hotfoot? Well, a real old New England Yankee with lots of ingenuity did. Seems he had a brood of skunks under his back porch which just refused to be dislodged. So our friend spread lye all over the wet grass surrounding the porch. Soon as the wood pussys came in contact with the red hot lye they hightailed it for points unknown. By the way, all this took place in a town by the name of Mystic.

* * *

Speaking-up pays off. *A college scholarship and a cash prize went to Mike Krawchek, 16-year old son of Orkin district manager, Abe Krawchek. Young Mike was named Jefferson County champion in The Birmingham News oratorical contest. Such talents will come in handy if he becomes a pest control salesman.*

COOPER MALATHION FORMULATIONS GUARANTEE EFFECTIVE RESULTS... ASSURE HIGHER PROFITS FOR YOU!

These Two Proven Products Are Approved For Use By P.C.O.'s In Their Servicing Operations!

COOPER MAL-OIL 50 PRODUCT

MALATHION (50% Oil Soluble)
(PATENT APPLIED FOR)

SOLUBILITY — Completely soluble in most commonly used petroleum solvents. Easy to mix —can be diluted to any strength desired.

SPRAYING and *FOGGING* — Ideal for spraying for the control of clover mites, resistant and non-resistant roaches. Excellent for use in large community spraying or fogging programs for flies.

ODOR—Has a very faint pleasing odor which quickly disappears after application.

Special P.C.O. Prices
53 gal. drums....$8.25 per gallon
30 gal. drums....$8.45 per gallon
5 gal. drums....$8.75 per gallon
(10 Gallons or more Delivered)

COOPER KILATHON PRODUCT

MALATHION (50% Emulsifiable)

SOLUBILITY—Easy to mix. Spontaneous dispersion in water; extremely stable. Requires little agitation after dilution.

USES—Use where emulsions are desired. Ideal for spraying or fogging around homes and commercial buildings for the control of clover mites, flies and resistant and non-resistant roaches. Very economical for community programs, for fly and roach control especially around refuse areas.

ODOR—Practically odorless—quickly disappears after application.

Special P.C.O. Prices
53 gal. drums....$7.20 per gallon
30 gal. drums....$7.60 per gallon
5 gal. drums....$8.20 per gallon
(10 Gallons or more Delivered)

You Can Rely On COOPER MALATHION INSECTICIDES For Highly Effective On-The-Job Results. Prompt Delivery Assured. Order Today!

WILLIAM COOPER & NEPHEWS, INC.
Est. 1843
1909 N. CLIFTON • CHICAGO 14, ILLINOIS

Chocolate Moths • House Flies • Cluste Flies • Blow Flies • Fruit Flies • Ro ches • Silverfish Crickets • Cheese Sk Mites • Spiders Horn • Wasps • Box Elder Bugs Con Beetles • Red Rust Flour Be Gr ary Weevils • oothed Grain Beet • Spider Beetles • Angou is Grain Moth • Me ean Flour Moths • Indian Me s • Grain Mites • Clo olie Wasps • Tobacco Moths House Flies • Mosquitoes • and Flies Horse and Deer Flies • Cucumber Beetles • Ticks • Clu Fleas • Lice • Bed Bugs Carpet Beetles • Spi Stable Fli • Mosquito Horn Flies Eye Gnats Little Black Ants (and many others)

Dead on the spot with PYRENONE*

Versatile Pyrenone meets this wide range of insecticide requirements with a combination of safety, effectiveness and economy that is unmatched. Non-hazardous, this remarkable combination of two insecticidal materials in varying ratios for specific purposes – *piperonyl butoxide* and *pyrethrins* – leaves no residues harmful to humans or warm-blooded animals, requires no special precautions in use. And, its high rate of knockdown, low concentrations required for final kill and long-lasting protection assure utmost economy. For full details – and specifications to meet your needs – contact your nearest Fairfield office or write to the address below.

Matchless Safety

Instant Effectiveness

Overall Economy

*Reg. U. S. Pat. Off.

FAIRFIELD CHEMICALS

TRADE MARK

FAIRFIELD CHEMICAL DIVISION

Food Machinery and Chemical Corporation
420 Lexington Avenue, New York 17, N. Y.
Branches in Principal Cities

fmc

In Canada: Natural Products Corporation, Toronto and Montreal

A COMPLETE LINE OF INSECTICIDE CONCENTRATES SOIL POISONS and SPECIALIZED FORMULAS

CHLORDANE
Technical Material
Agricultural & Refined Grades

LUCIDE T-20
1 Gal. plus 10 gals. oil makes a 2% ready to use material.

LUCIDE A-20
A true colloidal emulsion of refined grade chlordane. 1 part plus 9 parts of water equals 10 parts of a permanently stable 2% Chlordane Emulsion.

LUCIDE S-60
A water miscible oil containing 60.3% refined grade chlordane. 1 part plus 29 parts of water equals 40 parts of a permanently stable 2% Chlordane Emulsion.

LUCIDE M-65
65% chlordane for dilution with water. For indoor or outdor use. Makes a highly stable emulsion.

LUCIDE EIGHT
72% chlordane. For soil work, termites and lawn work. Readily miscible with water. Not recommended for indoor use. EXTREMELY LOW IN COST.

LINDANE
Technical material

LUCIDE L-10
10% for dilution with oil.

LUCIDE LM-10
10% for dilution with water.

THE MONEY-MAKING FORMULAS FOR THE PCO

We Also Offer

PIVAL

An anti-coagulant for Rat and Mouse Control

The new insect and mold-resistant rodenticide for use in dry baits. One pound plus nineteen pounds of suitable cereal will make twenty pounds of a ready to use bait.

PIVALYN

A water-soluble anti-coagulant rodenticide

One packet to one quart of water. Equally effective in hard or soft water. Mold-resistant action provides excellent keeping qualities, even with sugar added. Holds up in field usage for 3 to 4 weeks.

PYRETHRUM and pyrethrum-piperonyl butoxide formulas for oil and water dilution.

PENTA 40 — 40% Concentrate pentachlorophenol

PESCOCIDE A — 42% Concentrate Sodium Arsenite

DIPTEREX 199 — Bait formulation for flies
Product of Pittsburgh Coke & Chemical
Packaged in 1 lb. shaker cans for resale.

Also available, MGK's DIPTEREX TABLETS

CHLOROBENZILATE—For Clover Mite Control

DIAZINON—Product of Geigy Agricultural Chemicals

Write today for full information and latest low prices

Do you have our catalog?

PCE

PEST CONTROL EQUIPMENT CO.

24 North Bond Street MO-8-1197 Mount Vernon, N. Y.

Printed in U. S. A